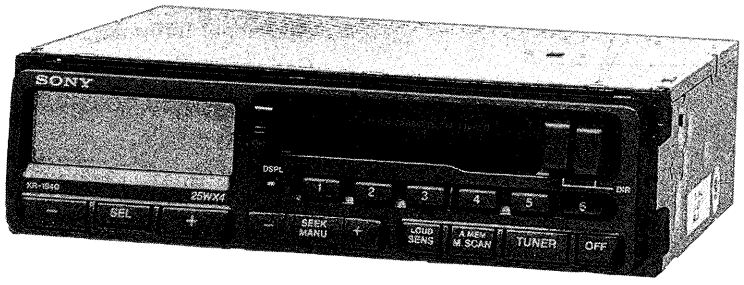
XR-1940

SERVICE MANUAL

E Model



Model Name Using Similar Mechanism	XR-1950
Tape Transport Mechanism Type	MG-36SHJ-32

SPECIFICATIONS

Cassette player section

Tape track	4-track 2-channel stereo
Wow and flutter	0.13 % (WRMS)
Frequency response	50 – 15,000 Hz
Signal-to-noise ratio	52 dB

Tuner section

FM

Tuning range	FM tuning interval: 50 kHz/200 kHz switchable 87.5 – 108.0 MHz (at 50 kHz step) 87.5 – 107.9 MHz (at 200 kHz step)
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	12 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	60 dB (stereo), 65 dB (mono)
Harmonic distortion at 1 kHz	0.5 % (stereo), 0.3 % (mono)
Separation	28 dB at 1 kHz
Frequency response	30 – 15,000 Hz
Capture ratio	2 dB

AM

Tuning range	AM tuning interval: 9 kHz/10 kHz switchable 531 – 1,602 kHz (at 9kHz step) 530 – 1,710 kHz (at 10 kHz step)
Antenna terminal	External antenna connector
Intermediate frequency	450 kHz
Sensitivity	30 µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	25 W × 4 (at 4 ohms)

General

Outputs	Power antenna relay control lead
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 178 × 50 × 176 mm (w/h/d) not incl. projecting parts and controls
Mounting dimension	Approx. 182 × 53 × 160 mm (w/h/d) not incl. projecting parts and controls
Mass	Approx. 1.3 kg
Supplied accessories	Parts for installation and connections (1 set)

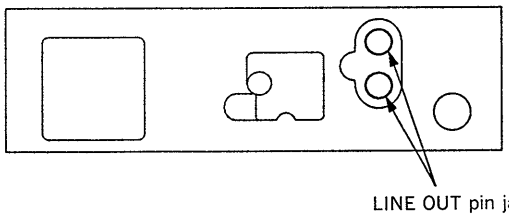
Design and specifications are subject to change without notice.

FM/AM CASSETTE CAR STEREO

SONY®

SERVICE NOTE

This set has two types: with LINE OUT pin jack without them.
Check the presence of LINE OUT pin jack on the rear of the set.



	TYPE A	TYPE B
LINE OUT pin jack	×	○

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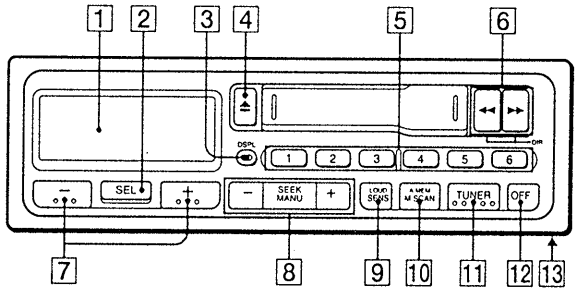
Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Location of controls



Refer to the pages for further details.

1 Display window
2 SEL (control mode select) button 4, 7
3 DSPL (display mode change/time set) button 4, 5, 6, 7
4 ⏏ (eject) button 4
5 During radio reception:
Preset number buttons 6
6 ◀◀/▶▶ (fast winding)/DIR (tape transport direction change) buttons 4
7 ⊕⊖ (volume/bass/treble/balance/fader control) button 7
8 SEEK/MANU button 6
9 LOUD (loudness)/SENS (sensitivity adjust) button 6, 7
10 A.MEM (automatic memory)/M.SCAN (Memory scan) 5, 6
11 TUNER (radio on/band select) button 5, 6
12 OFF button
13 Frequency select switch (located on the bottom of the unit)
See "Frequency select switch" in the Installation/Connections manual.

EN EN

Additional Information

Getting Started

Setting the clock

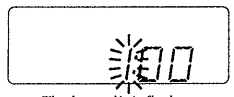
The clock has a 12-hour digital indication.

Note
Turn the power on first, then set the clock.
To turn the power on, press (TUNER).

Example : Set the clock to 10:08

1 Display the time.
press (DSPL) during operation.

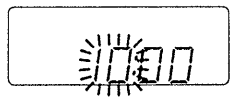
2 Press (DSPL) for two seconds.



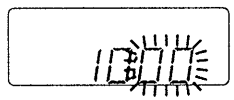
The hour digit flashes.

❶ Set the hour.

to go back to go forward



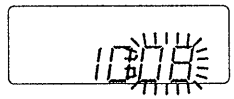
❷ Press (SEL) momentarily.



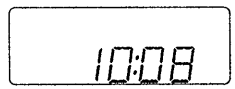
The minute digits flash.

❸ Set the minute.

to go back to go forward



3 Press (DSPL) momentarily.

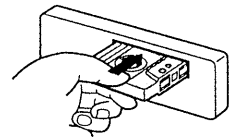


The clock starts.

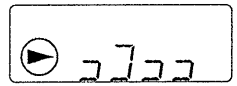
Cassette Player

Listening to the tape

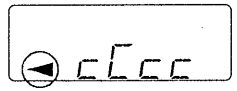
Insert the cassette.



Playback will start automatically.



The side facing up is being played.



The side facing down is being played.

Tip
To change the tape transport direction, press both ◀◀ and ▶▶ at the same time.

To eject the cassette, press ⏏.

Fast-winding the tape

Direction indicator	Fast-forward	Rewind
►	▶▶	◀◀
◄	◀◀	▶▶

To resume playback, press the other fast-winding button partially until the locked button is released.

Tip
◄ and ► flashes while fast-winding the tape.

This section is extracted from instruction manual.

Changing the displayed items

Each time you press (DSPL) momentarily during tape playback, the displayed item changes as follows:

Tape playback ⟷ Clock

Radio

Memorizing stations automatically

— Automatic Memory

The unit selects the stations with clearst reception and memorises them. You can store up to 6 stations on each band (FM1, FM2, FM3, AM1 and AM2).

Caution

When tuning in the station while driving, use Automatic Memory to prevent accidents.

1 Press (TUNER) repeatedly to select the desired band (FM1, FM2, FM3, AM1 and AM2).

2 Press (A.MEM/M.SCAN) for two seconds.
The unit stores stations on the number buttons.

Notes

- *The unit will not store stations with weak signals. If there are only a few stations that you can receive, the stations stored before will remain on the other number buttons.*
- *When a preset number is indicated in the display , the unit starts storing stations from the one currently displayed.*

Memorizing only the desired stations

You can store up to 6 stations on each band (18 for FM1, FM2 and FM3, 12 for AM1 and AM2) in order of your choice.

1 Press (TUNER) repeatedly to select the desired band.

2 Press either side of (SEEK/MANU) to tune in the station that you want to store on the number button.

3 Keep the desired number button (1) to (6)) pressed for two seconds until you hear a beep tones.

The number button indication appears in the display.

Note

If you try to store another station on the same number button, the previously stored station will be erased.

Receiving the memorized stations

1 Press (TUNER) repeatedly to select the desired band.

2 Press the number button (1) to (6)) momentarily where the desired station is stored.

Tip

Press (A.MEM/M.SCAN) momentarily to receive in order the stations stored in the memory (Memory scan Function).

If you cannot tune in a preset station

Press either side of (SEEK/MANU) momentarily to search for the station (automatic tuning).
Scanning stops when the unit receives a station. Press either side of (SEEK/MANU) repeatedly until the desired station is received.

Note

If the automatic tuning stops too frequently, press (LOUD/SENS) momentarily until "LCL" (local seek mode) appears in the display. Only the stations with relatively strong signals will be tuned on.

Tip

If you know the frequency of the station you want to listen to, press and hold either side of (SEEK/MANU) until the desired frequency appears (manual tuning).

If FM stereo reception is poor — Monaural mode

Press (LOUD/SENS) momentarily until "MONO" appears.
The sound improves, but it will becomes monaural ("STEREO" disappears).

Changing the displayed items

Each time you press (DSPL), the item changes as follows:

Frequency ⟷ Clock

Other Functions

Adjusting the sound characteristics

You can adjust the bass, treble, balance and fader.

1 Select the item you want to adjust by pressing (SEL) repeatedly.
To adjust bass or treble, press (SEL) repeatedly until "BAS" or "TRE" flashes.

BAS (bass) → TRE (treble)
→ BAL (balance) → FAD (fader)
→ VOL (volume)

2 Adjust the selected item by pressing ⊕ or ⊖.

Adjust within three seconds after selecting. (After three seconds the buttons work as volume control buttons.)

Changing the sound and display settings

Enjoying bass and treble even at low volume — Loudness

Bass and treble will be reinforced.

Press (LOUD/SENS) for two seconds.
"LOUD" appears.

To cancel, press (LOUD/SENS) for two seconds again.

Turn off the beeps

Press (6) while pressing (SEL).
To obtain the beeps again, press these buttons again.

Additional Information

Precautions

- If your car was parked in direct sunlight resulting in a considerable rise in temperature inside the car, allow the unit to cool off before operating it.
- If no power is being supplied to the unit, check the connections first. If everything is in order, check the fuse.
- If no sound comes from the speakers of a 2-speaker system, set the fader control to the center position.
- When the tape is played back for a long period, the cassette shell may become warm because of the built-in power amplifier. However, this is not a sign of a malfunction.

If you have any questions or problems concerning your unit that are not covered in this manual, please consult your nearest Sony dealer.

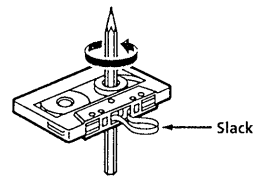
To maintain high quality sound

If you have drink holders near your audio equipment, be careful not to splash juice or other soft drinks onto the car audio. Sugary residues on this unit or cassette tapes may contaminate the playback heads, reduce the sound quality, or prevent sound reproduction altogether.
Cassette cleaning kits cannot remove sugar from the tape heads.

Notes on Cassettes

Cassette care

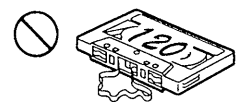
- Do not touch the tape surface of a cassette, as any dirt or dust will contaminate the heads.
- Keep cassettes away from equipment with built-in magnets such as speakers and amplifiers, as erasure or distortion on the recorded tape could occur.
- Do not expose cassettes to direct sunlight, extremely cold temperatures or moisture.
- Slack in the tape may cause the tape to be caught in the machine. Before you insert the tape, use a pencil or similar object to turn the reel and take up any slack.

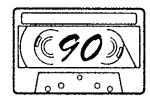


- Distorted cassettes and loose labels can cause problems when inserting or ejecting tapes. Remove or replace loose labels.

Cassettes longer than 90 minutes

The use of cassettes longer than 90 minutes is not recommended except for long continuous play. The tapes used for these cassettes are very thin and tend to be stretched easily. Frequent playing and stopping of these tapes may cause them to be pulled into the cassette deck mechanism.



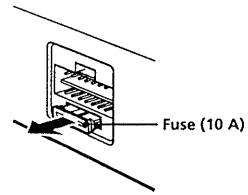


Maintenance

Fuse Replacement

When replacing the fuse, be sure to use one matching the amperage rating stated on the fuse. If the fuse blows, check the power connection and replace the fuse. If the fuse blows again after replacement, there may be an internal malfunction. In such a case, consult your nearest Sony dealer.

Replace the fuse on the rear of the unit.



Warning

Never use a fuse with an amperage rating exceeding the one supplied with the unit as this could damage the unit.

Connections/Conexiones/線路之連接

Caution

- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- **Run all ground wires to a common ground point.**

注意

本機只可使用負極接地 12V 直流電操作。
- 連接以前，先拔取汽車電池的接地端子，以免發生短路。
- 紅色及黃色電源輸入導線必須等所有電線都連接完畢以後才可連接。
- **所有地線都必需連接到同一接地點才行。**

Precauciones

- Esta unidad ha sido diseñada para alimentarse con 12 V CC, negativo a masa, solamente.
- Antes de realizar las conexiones, desconecte el terminal de puesta a masa de la batería del automóvil a fin de evitar cortocircuitos.
- Conecte los cables conectores de alimentación **amarillo** y **rojo** solamente después de haber conectado los demás.
- **Conecte todos los conductores de puesta a masa a un punto común.**

Frequency Select Switch

The AM (FM) tuning interval is factory-set to the 9K (50 K) position. If the frequency allocation system of your country is based on 10 kHz (200 kHz) interval, set the switch on the bottom of the unit to the 10 K (200 K) position before making connections.

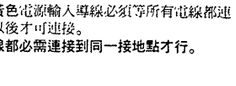
頻率選擇開關

本裝置的 AM (FM) 調諧區間在出廠以前被設定在 "9K (50K)" 位置上。若貴地的頻率區間爲 "10 kHz (200 kHz)"，連接以前請先把本機機底的選擇開關設定在 "10 K (200 K)" 之處。

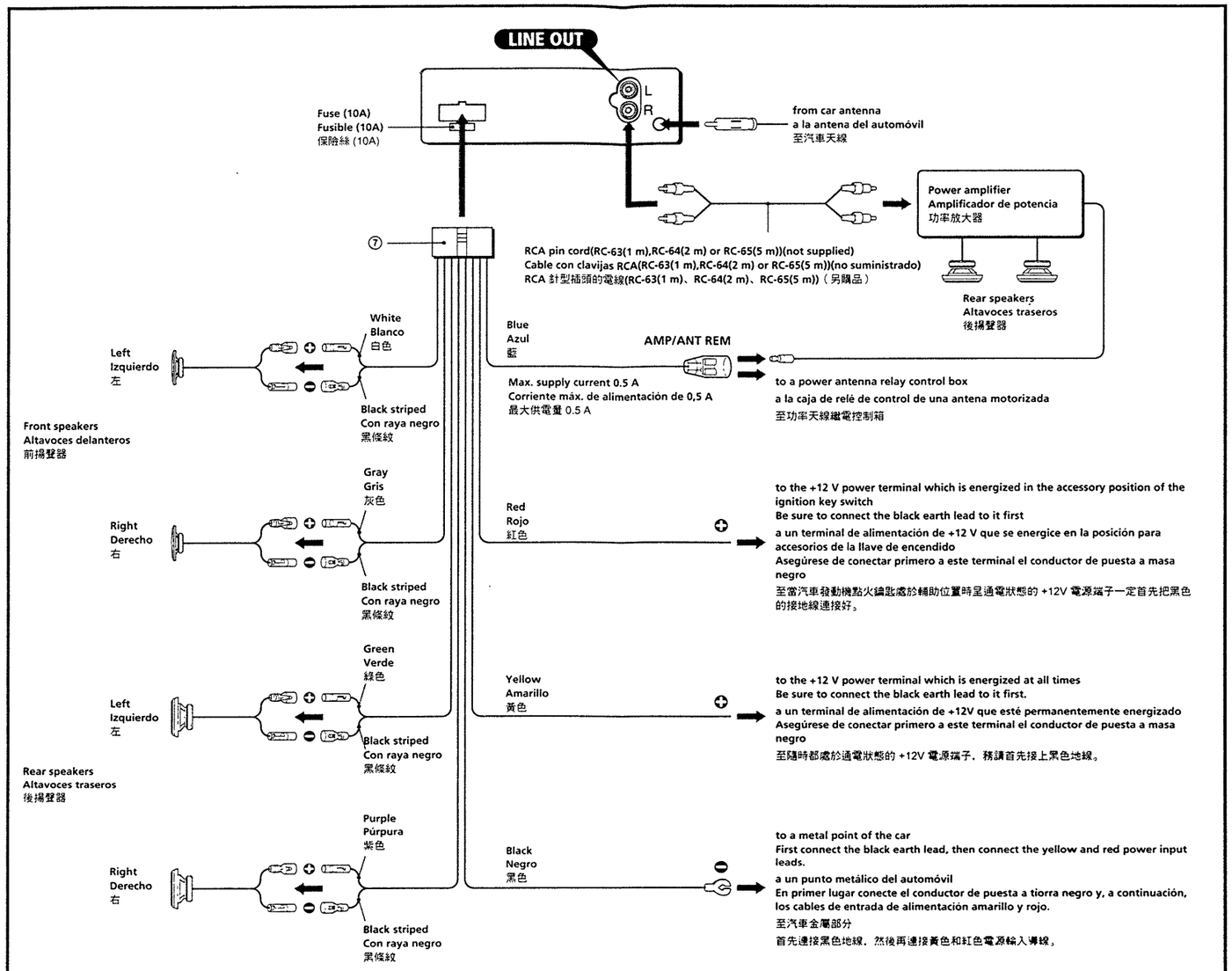
Selector de frecuencia

El intervalo de sintonía de AM (FM) ha sido ajustado en fábrica a la posición 9 K (50 K). Si el sistema de asignación de frecuencias de su país se basa en el intervalo de 10 kHz (200 kHz), ponga este selector, situado en la base de la unidad, en la posición 10 K (200 K) antes de realizar las conexiones.

Change the position with a jeweler's screwdriver, etc.
Cambie la posición con un destornillador de relojero, etc.
以珠寶行用的先端尖細的螺絲起子等改變開關位置。



Connection Example / Ejemplo de conexiónes / 線路之連接圖例



Notes on the control leads
- *The ANT REM lead (blue) supplies +12 V DC when you turn on the unit. When the ANT REM lead is connected to the power antenna, the antenna will be extended as long as the unit is turned on.*
- *A power antenna without relay box cannot be used with this unit.*

Memory hold connection
When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

Notes on speaker connection
- *Before connecting the speakers, turn the unit off.*
- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.*
- *Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Therefore, be sure to connect passive speakers to these terminals.*

Notas sobre conductores de control
- *ANT REM (azul) suministra +12 V cuando conecte la alimentación a la unidad. Al conectar el conductor de control ANT REM a la antena motorizada, ésta se extenderá siempre que se active la unidad.*
- *Con esta unidad no podrá emplearse una antena motorizada desprovista de caja de relé.*

Conexión para protección de la memoria
Si conecta el conductor de entrada amarillo, el circuito de la memoria recibirá siempre alimentación, incluso aunque ponga la llave de encendido en la posición OFF.

Notas sobre la conexión de los altavoces
- *Antes de conectar los altavoces, desconecte la alimentación de la unidad.*
- *Utilice altavoces con una impedancia de 4 a 8 Ohmios, y con la potencia máxima admisible adecuada, ya que de lo contrario podría dañarlos.*
- *No conecte los terminales del sistema de altavoces al chasis del automóvil, ni los del altavoz izquierdo a los del derecho.*
- *No intente conectar los altavoces en paralelo.*
- *No conecte altavoces activos (con amplificadores incorporados) a los terminales de altavoces de la unidad. Si lo hiciese, podría dañar tales altavoces. Por lo tanto, cerciórese de conectar altavoces pasivos a estos terminales.*

關于控制導線
- *接通本機電源時，ANT REM 線（藍）電能供給 12V 直流電。ANT REM 線和功率天線相連接時，只要主機的電源接通著，天線都會伸出機外。*
- *本機不能使用沒具繼電箱的功率天線。*

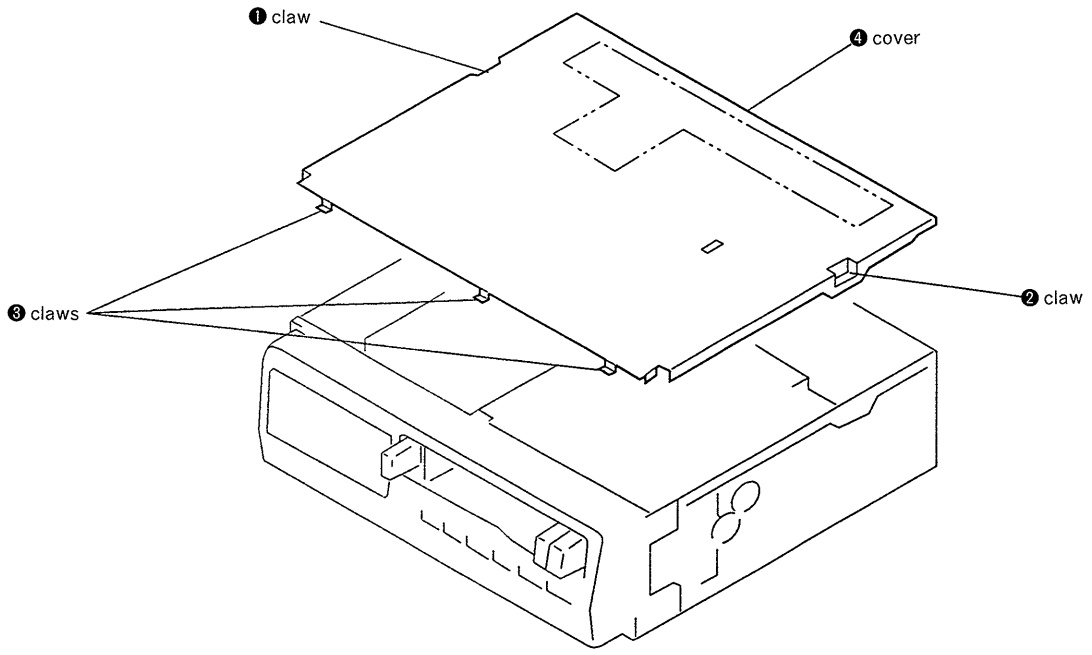
保持記憶的線路連接法
當連接著黃色電源輸入電線時，即使汽車發動機點火鑰匙被轉在電源切斷之處，電源仍將繼續供給記憶電路使用電線，以維持所記憶著的數據。

連接揚聲器時的注意事項
- *連接揚聲器電線以前，請先切斷本機電源。*
- *揚聲器請使用阻抗為 4 到 8 之間，並且有適合本機使用的耐容量者。否則會損壞揚聲器。*
- *不可把揚聲器端子連接到汽車底盤，也不可把右揚聲器和右揚聲器相連接。*
- *揚聲器不可平行的連接。*
- *不可連接有源揚聲器（內裝有放大器者）至本機的揚聲器端子。否則會損壞揚聲器。這些端子只能連接無源揚聲器。*

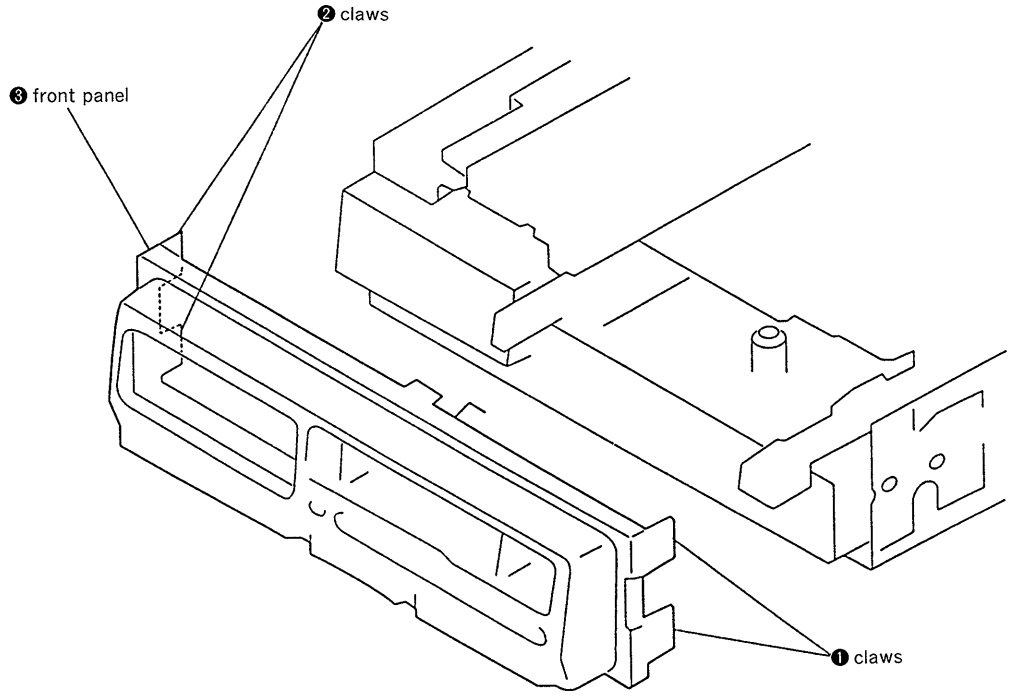
SECTION 2
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

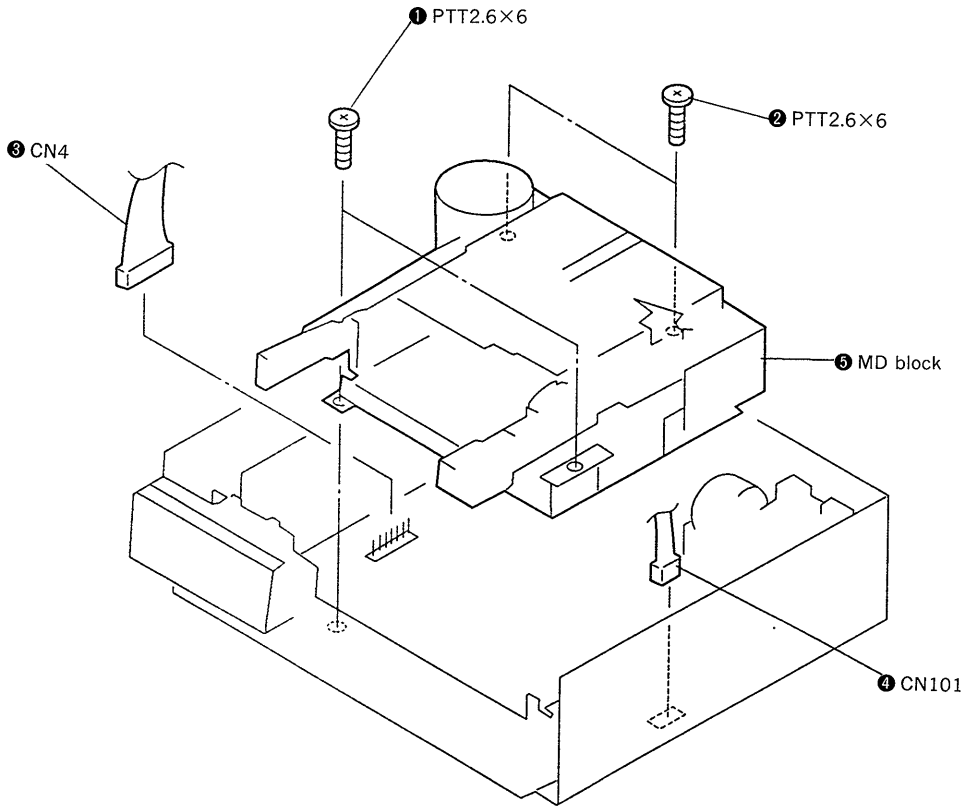
2-1. COVER



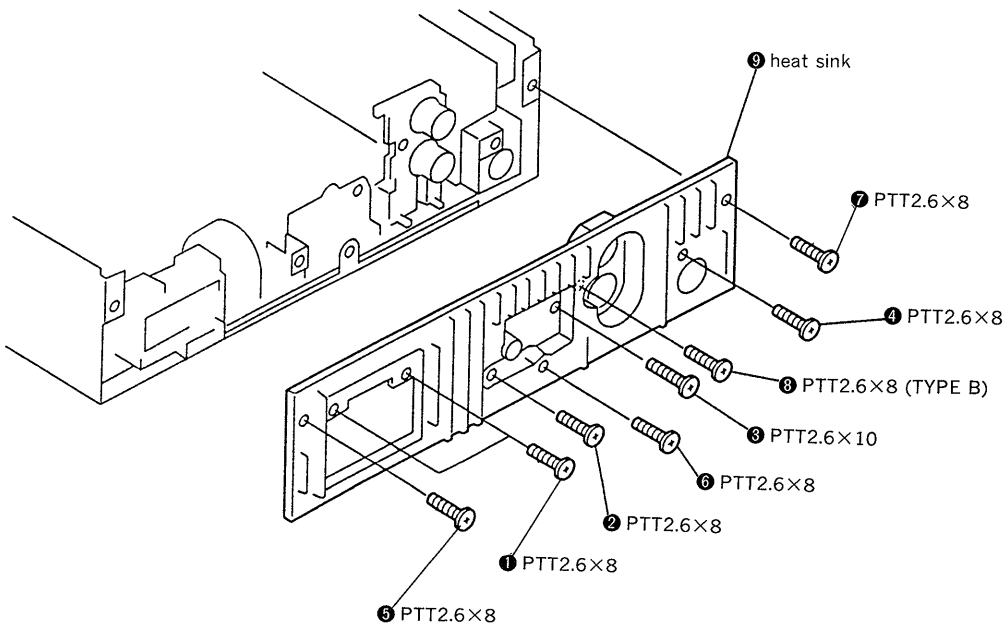
2-2. FRONT PANEL



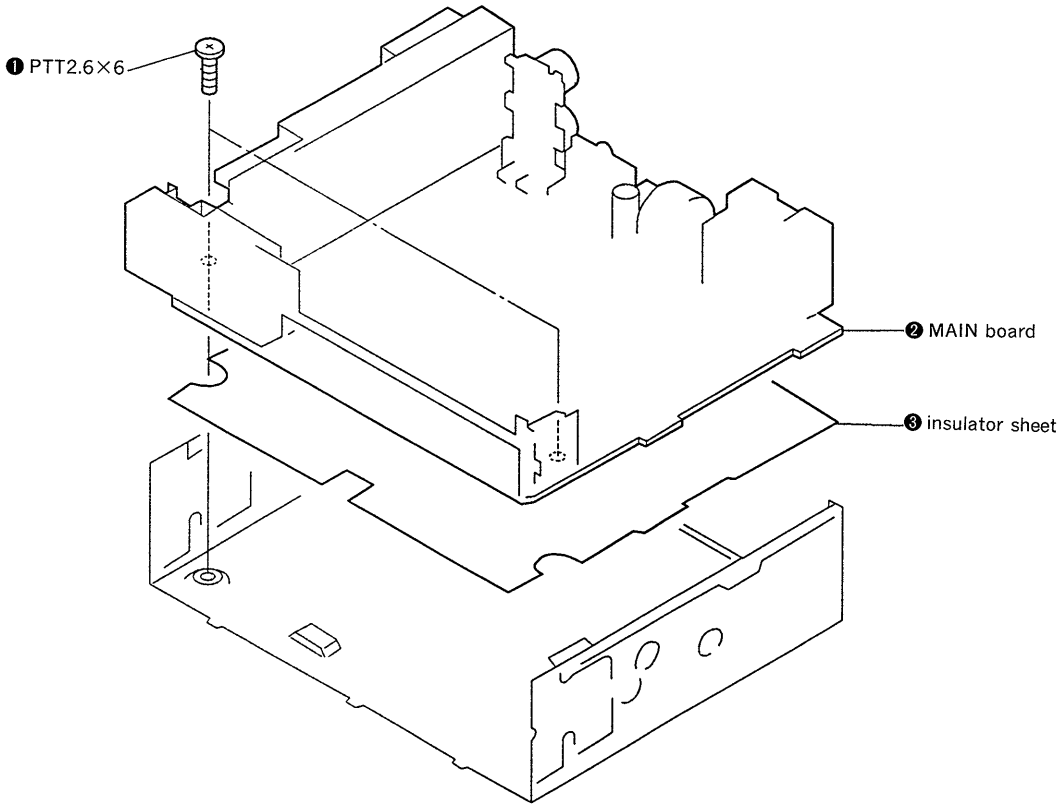
2-3. MD BLOCK



2-4. HEAT SINK



2-5. MAIN BOARD



SECTION 3
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Wipe the following components with an absorbent cotton cloth moistened with alcohol before adjustment:
   PB head　　Pinch roller
   Idler　　Rubber belt
   Capstan
2. Demagnetize the PB head using a head demagnetizer.
3. Be careful not to use a magnetized screwdriver.
4. After the adjustment is completed, lock the adjustment parts using screws.
5. Unless otherwise specified, make adjustments at the specified voltage (14.4V).

Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	40—75g•cm (0.56—1.04oz•inch)
FWD Back Tension		1—5g•cm (0.01—0.06oz•inch)
REV	CQ-102RC	40—75g•cm (0.56—1.04oz•inch)
REV Back Tension		1—5g•cm (0.01—0.06oz•inch)
FF, REW	CQ-201B	45—150g•cm (0.63—2.08oz•inch)

SECTION 4
ELECTRICAL ADJUSTMENTS

DECK SECTION **0dB=0.775V**

1. The adjustments should be performed in the order given in this service manual.
2. The adjustments should be performed for both L-CH and R-CH.

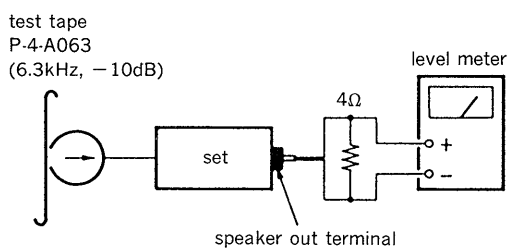
Test Tape

Type	Signal	Used for
P-4-A063	6.3kHz, −10dB	head azimuth adjustment
WS-48A	3kHz, 0dB	tape speed adjustment

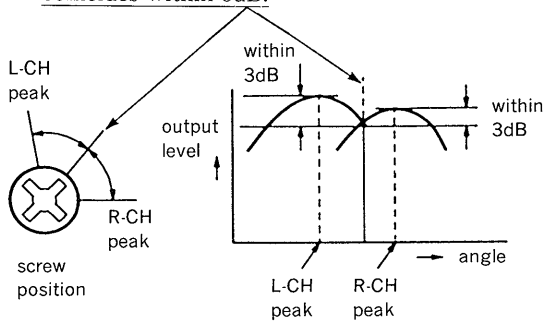
PB Head Azimuth Adjustment

Procedure:

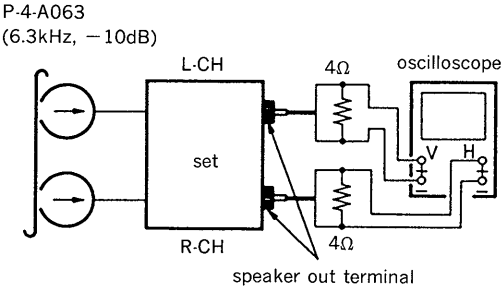
1. Mode: playback

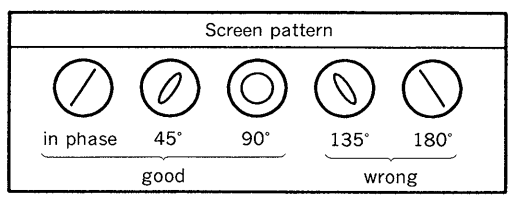


2. Turn the screw and check the output peak value. Adjust the screw so that the peak value in channels L and R coincides within 3dB.



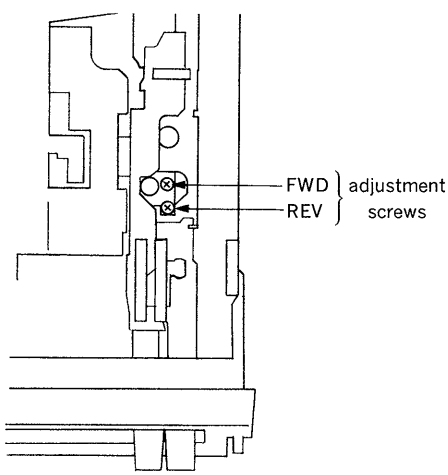
3. Check the phase in the PB mode.





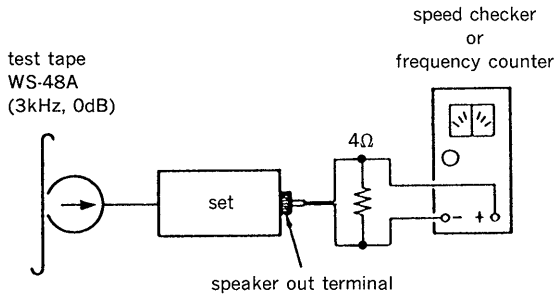
4. Repeat the above adjustment for the PB REV mode.

Adjustment Location:



Tape Speed Adjustment

Setting :



Procedure :

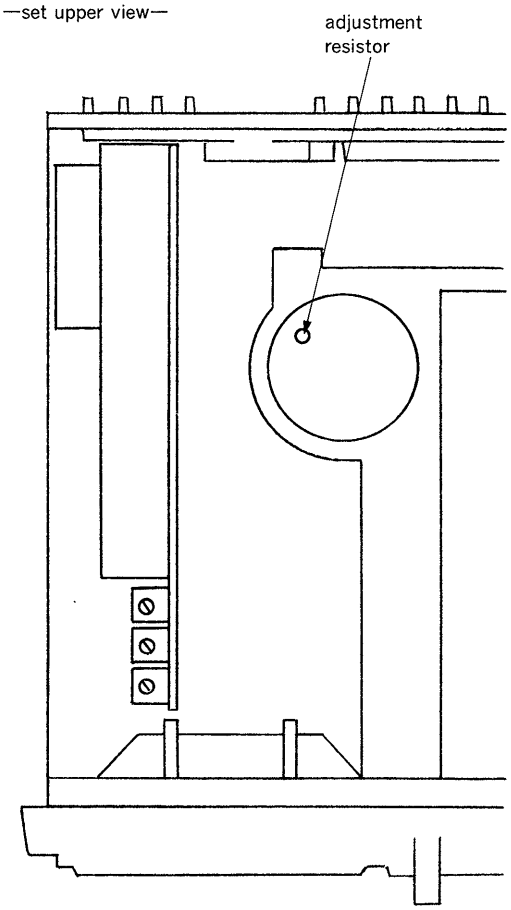
1. Put the set into the FWD PB mode.
2. Adjust adjustment resistor for inside capstan motor so that the reading on the speed checker or frequency counter becomes in specification.

Specification : Constant speed

Speed checker	Frequency counter
−2.0 to +3.0%	2,940 to 3,090Hz

Adjustment Location :

—set upper view—



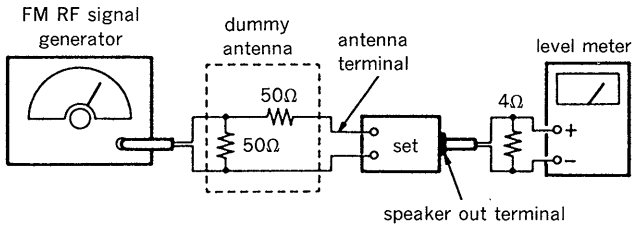
TUNER SECTION | 0dB=1μV

Cautions during repair
When the FM tuner is defective, replace it by a new one because its internal block is difficult to repair.

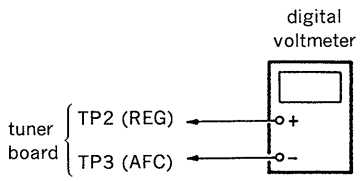
FM OV Adjustment

Setting :

TUNER button : FM
FREQUENCY SELECT switch : FM50k



Carrier frequency : 98.0MHz
Output level : 60dB (1mV)
Mode : mono
Modulation : 1kHz, 75kHz deviation (100%)



Procedure :

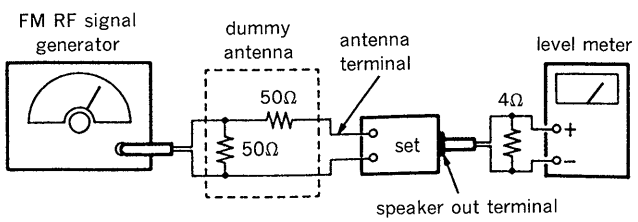
1. Tune the set to 98.0MHz.
2. Adjust T56 so that the reading on the digital voltmeter becomes 0±0.02V.

Adjustment Location : See page 15.

FM High Cut Control Adjustment

Setting :

TUNER button : FM
FREQUENCY SELECT switch : FM50k



Carrier frequency : 98.0MHz
Output level : 60dB (1mV)
Mode : mono
Modulation : 10kHz, 75kHz deviation (100%)

Procedure :

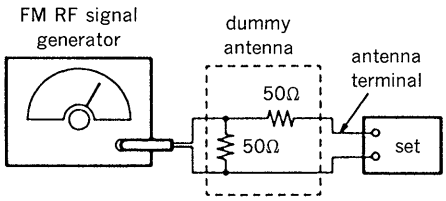
1. Tune the set to 98.0MHz.
2. The then output level is supposing that (A) dB.
3. Adjust RV53 so that the output level is (A)−4±1dB then signal generator input set to 20dB.

Adjustment Location : See page 15.

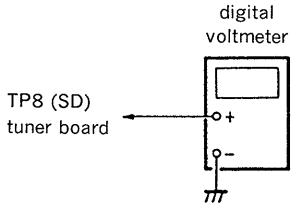
FM SEEK Stop Adjustment

Setting :

TUNER button : FM
FREQUENCY SELECT switch : FM50k



Carrier frequency : 98.0MHz
Output level : 22dB (12.6μV)
Mode : mono
Modulation : 1kHz, 22.5kHz deviation (30%)



Procedure :

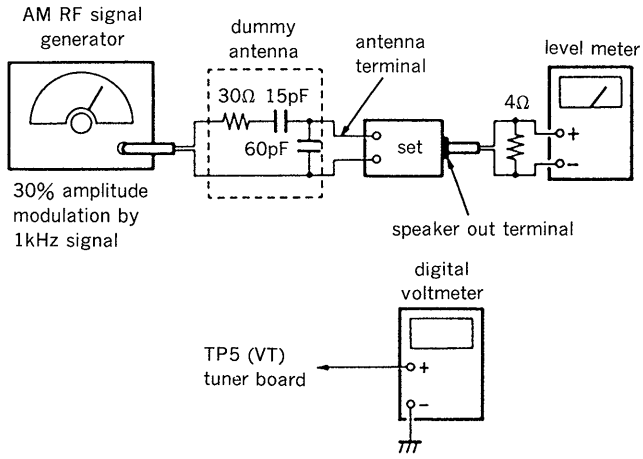
1. Short the jumper wire between TP9 and VCC (+5V). (See page 15.)
2. Adjust RV51 so that the reading on the digital voltmeter becomes 3Vdc.
3. After adjustment is completed remove the jumper wire.

Adjustment Location : See page 15.

AM VT Adjustment

Setting :

TUNER button : AM
FREQUENCY SELECT switch : AM9k



Procedure :

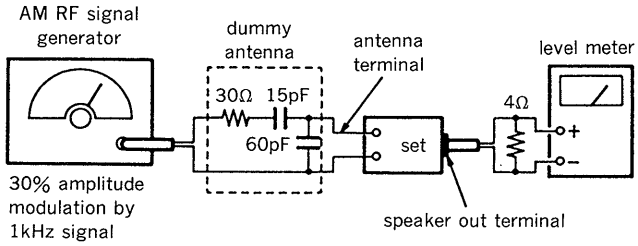
1. Tune the set to 531kHz.
2. Adjust L54 so that the reading on the digital voltmeter becomes 1.5±0.03V.
3. Tune the set to 1,710kHz.
4. Adjust CT53 so that the reading on the digital voltmeter becomes 7.8±0.1V.

Adjustment Location : See page 15.

AM IF Adjustment

Setting :

TUNER button : AM
FREQUENCY SELECT switch : AM9k



Procedure :

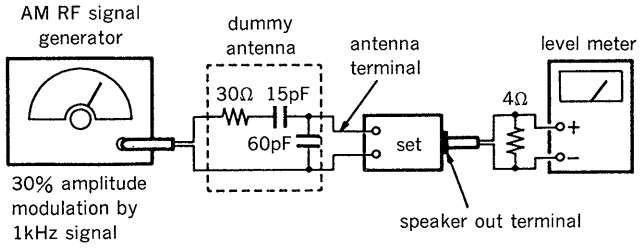
1. Tune the set to 999kHz.
2. Adjust T55 so that the reading on the level meter becomes to maximum.

Adjustment Location : See page 15.

AM Tracking Adjustment

Setting :

TUNER button : AM
FREQUENCY SELECT switch : AM9k



Procedure :

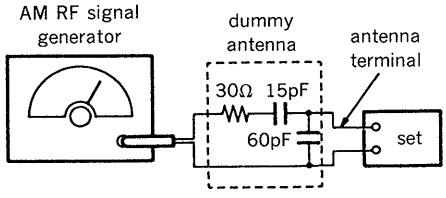
1. Tune the set to 603kHz.
2. Adjust T51 and T53 so that the reading on the level meter becomes to maximum.
3. Tune the set to 1,512kHz.
4. Adjust CT51 and CT52 so that the reading on the level meter becomes to maximum.

Adjustment Location : See page 15.

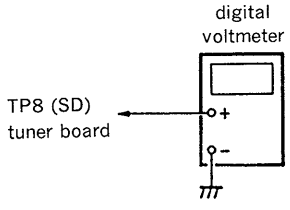
AM SEEK Stop Adjustment

Setting :

TUNER button : AM
FREQUENCY SELECT switch : AM9k



Carrier frequency : 999kHz
Output level : 33dB (44.7μV)
Modulation : no modulation



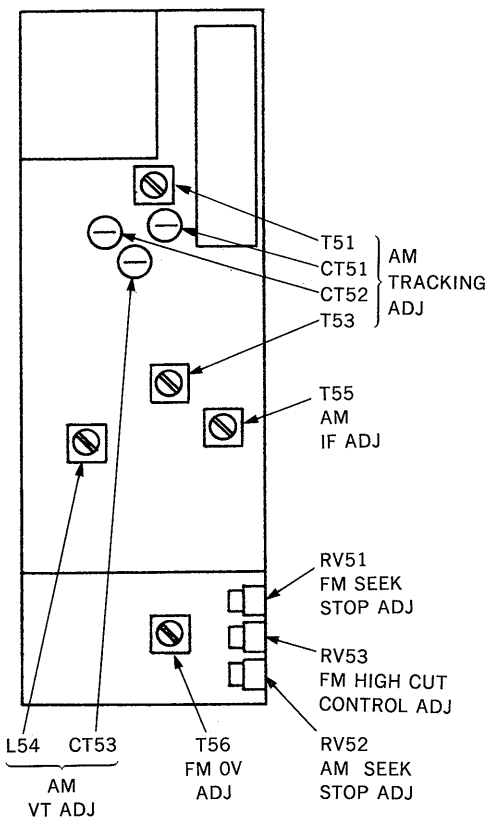
Procedure :

1. Short the jumper wire between TP9 and VCC (+5V). (See page 15.)
2. Adjust RV52 so that the reading on the digital voltmeter becomes 3Vdc.
3. After adjustment is completed remove the short wire.

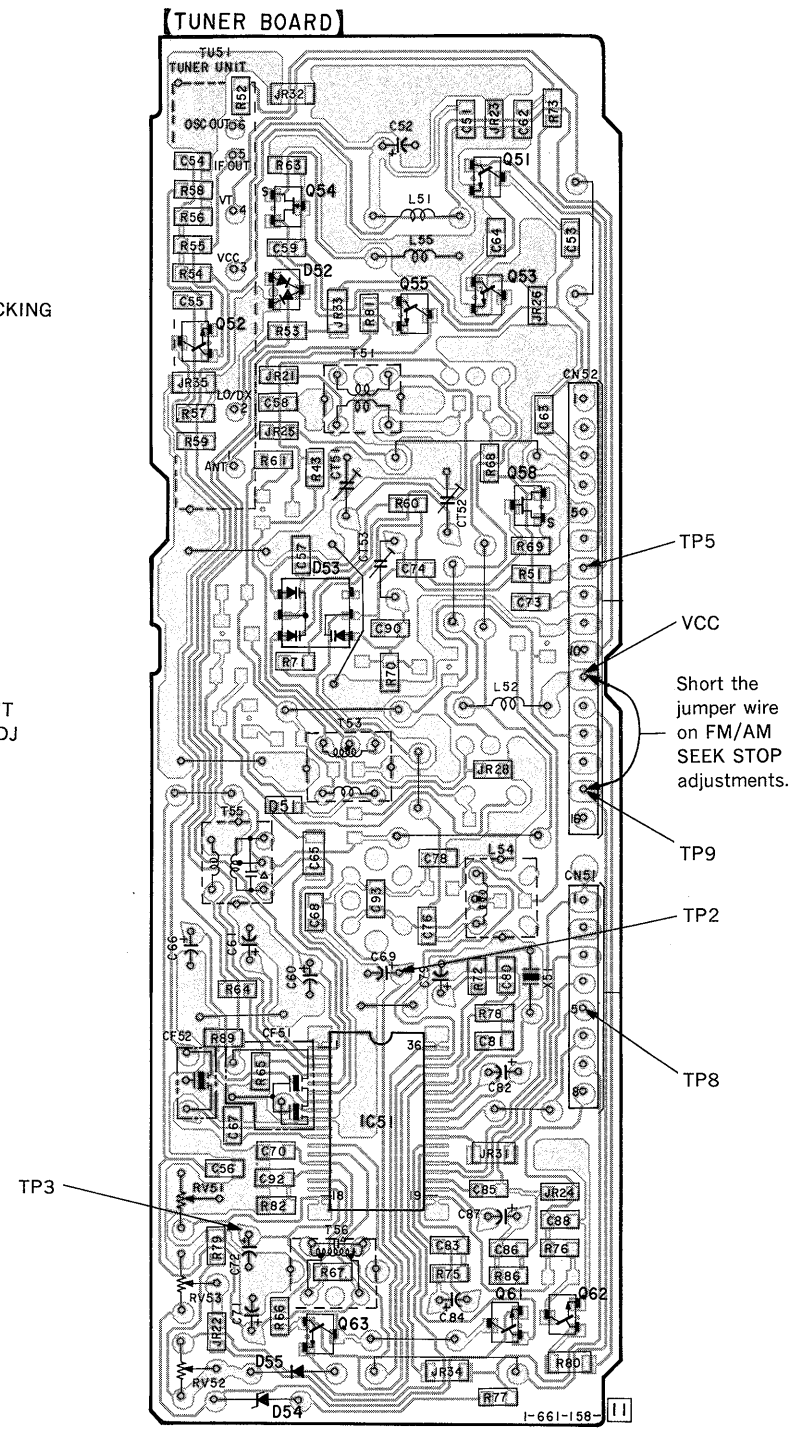
Adjustment Location : See page 15.

Adjustment Location : tuner board

—tuner board (component side)—



—tuner board (conductor side)—



SECTION 5
DIAGRAMS

5-1. PRINTED WIRING BOARDS

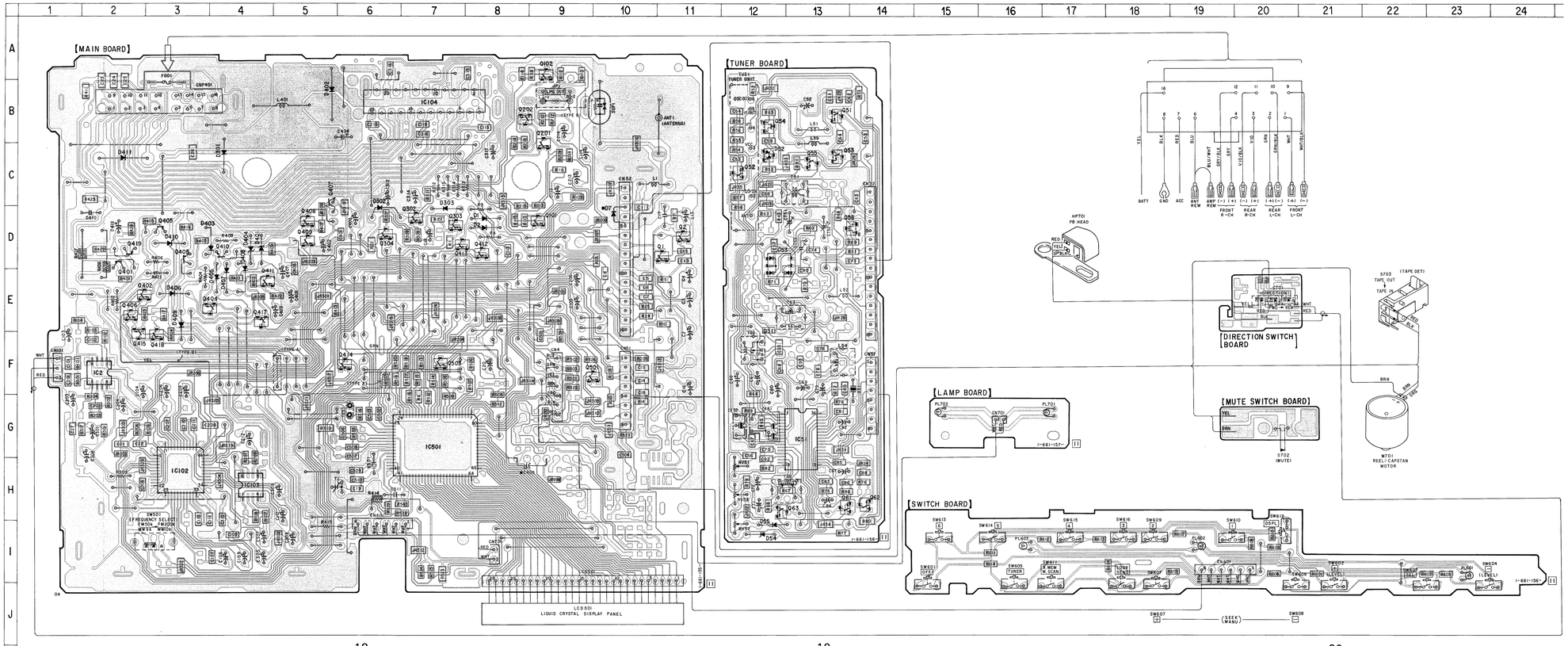
● **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location
D1	D-8	Q53	C-13
D2	D-8	Q54	B-12
D7	D-10	Q55	C-13
D51	E-12	Q58	D-13
D52	C-12	Q61	H-13
D53	D-12	Q62	H-14
D54	I-12	Q63	H-12
D55	I-12	Q101	D-9
D301	C-4	Q102	A-9
D302	D-6	Q201	B-9
D303	D-7	Q202	B-8
D401	D-4	Q302	D-7
D402	B-5	Q303	D-7
D403	D-4	Q304	D-6
D404	D-4	Q401	D-2
D405	E-4	Q402	E-2
D406	E-3	Q403	D-3
D407	E-4	Q404	E-4
D408	D-4	Q405	D-3
D409	E-3	Q406	E-2
D410	D-3	Q407	C-5
D411	C-2	Q408	D-5
		Q409	D-5
IC2	F-2	Q410	D-4
IC51	G-13	Q411	E-4
IC102	H-3	Q412	D-8
IC103	H-4	Q413	D-7
IC104	B-7	Q414	F-6
IC501	G-7	Q415	F-2
		Q417	E-4
Q1	D-11	Q418	F-3
Q2	D-11	Q419	D-2
Q51	B-13	Q501	F-9
Q52	C-12	Q503	F-7

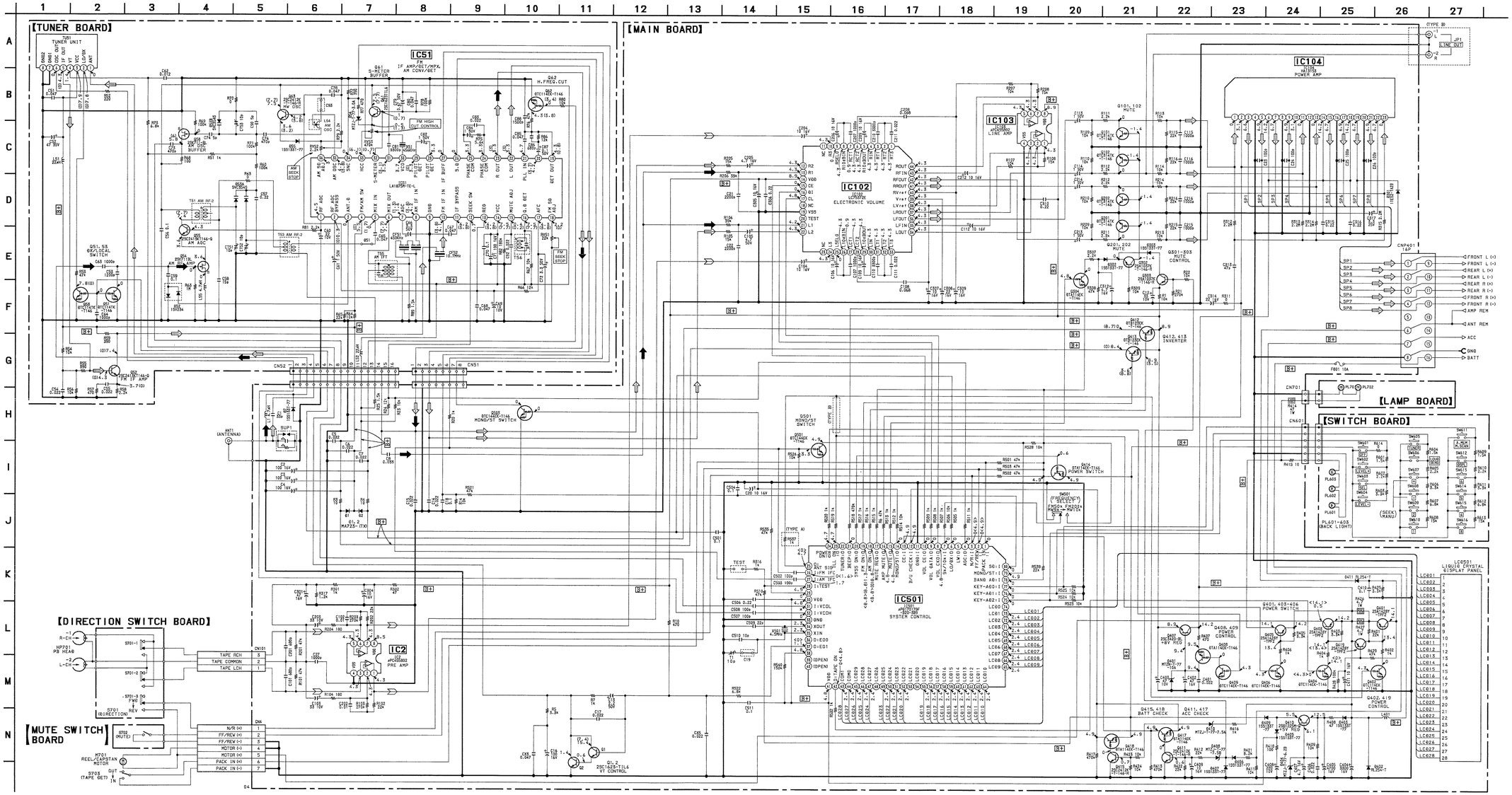
Note :

- ○—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
-

	TYPE A	TYPE B
LINE OUT pin jack	×	○



5-2. SCHEMATIC DIAGRAM • Refer to page 25 for IC Block Diagrams.



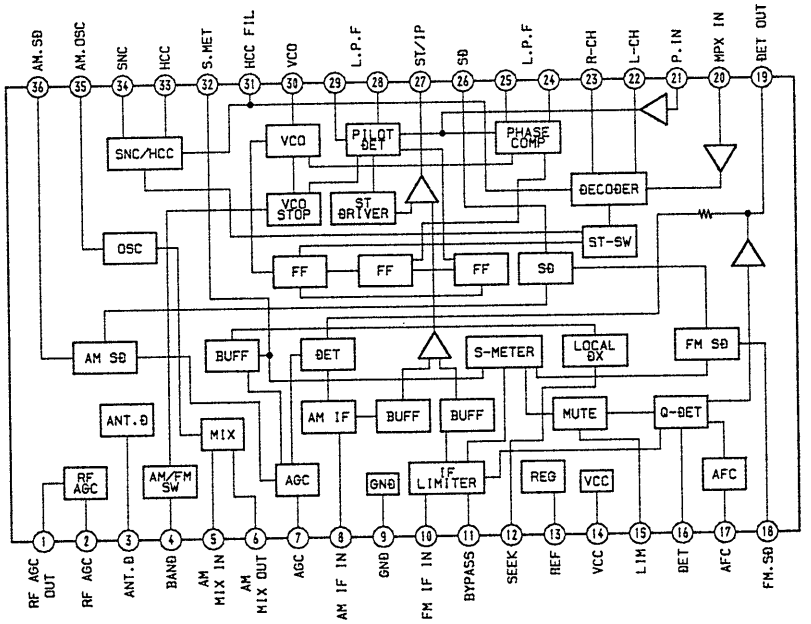
Note :

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ⚡ : nonflammable resistor.
- B+ : B+ Line
- ▭ : adjustment for repair.
- Power voltage is dc 14.4V and fed with regulated dc power supply from BATT and ACC terminals.
- Voltage is dc with respect to ground under no-signal (detuned) conditions.
- no mark: FM
  ( ): AM
  < >: PB
  ✱ : Impossible measurement point
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM
  ➡ : AM
  ⇨ : PB

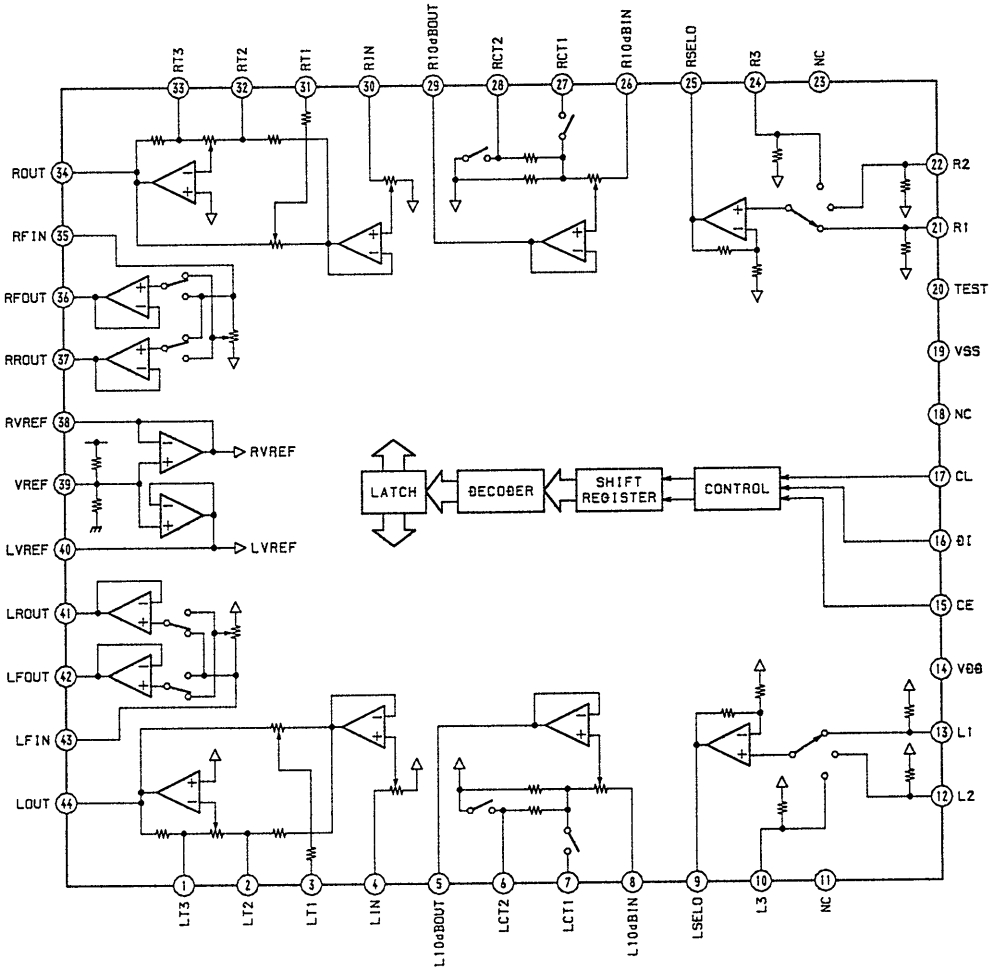
	TYPE A	TYPE B
LINE OUT pin jack	×	○

• IC Block Diagrams

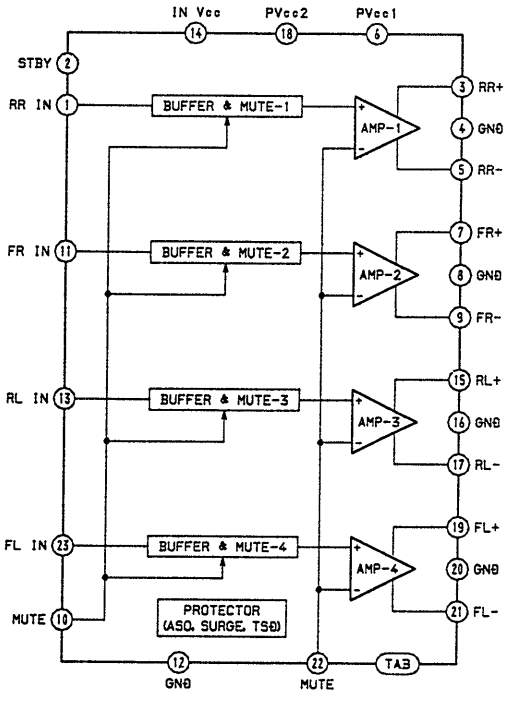
IC51 LA1875M-TE-L



IC102 LC75372E



IC104 HA13153



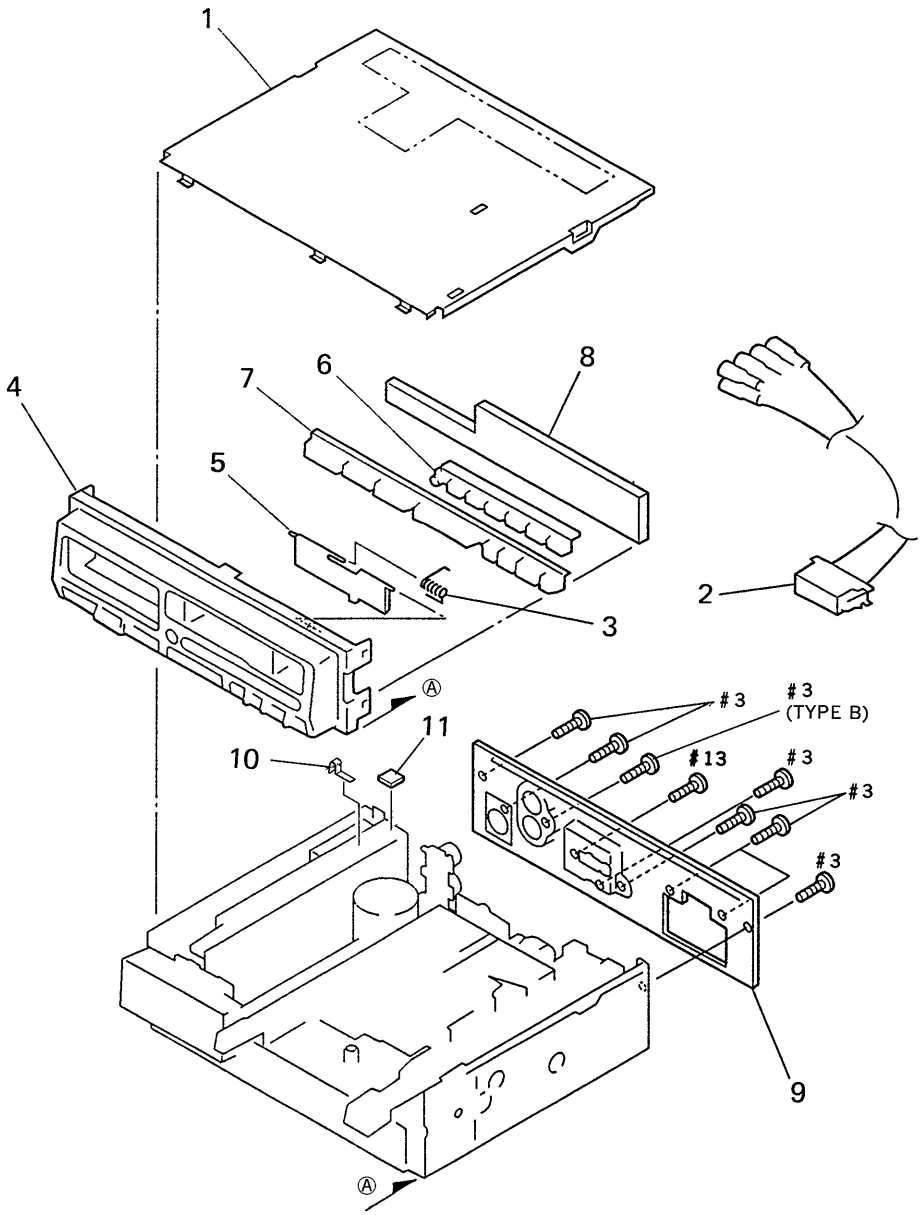
SECTION 6
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE)... (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
-

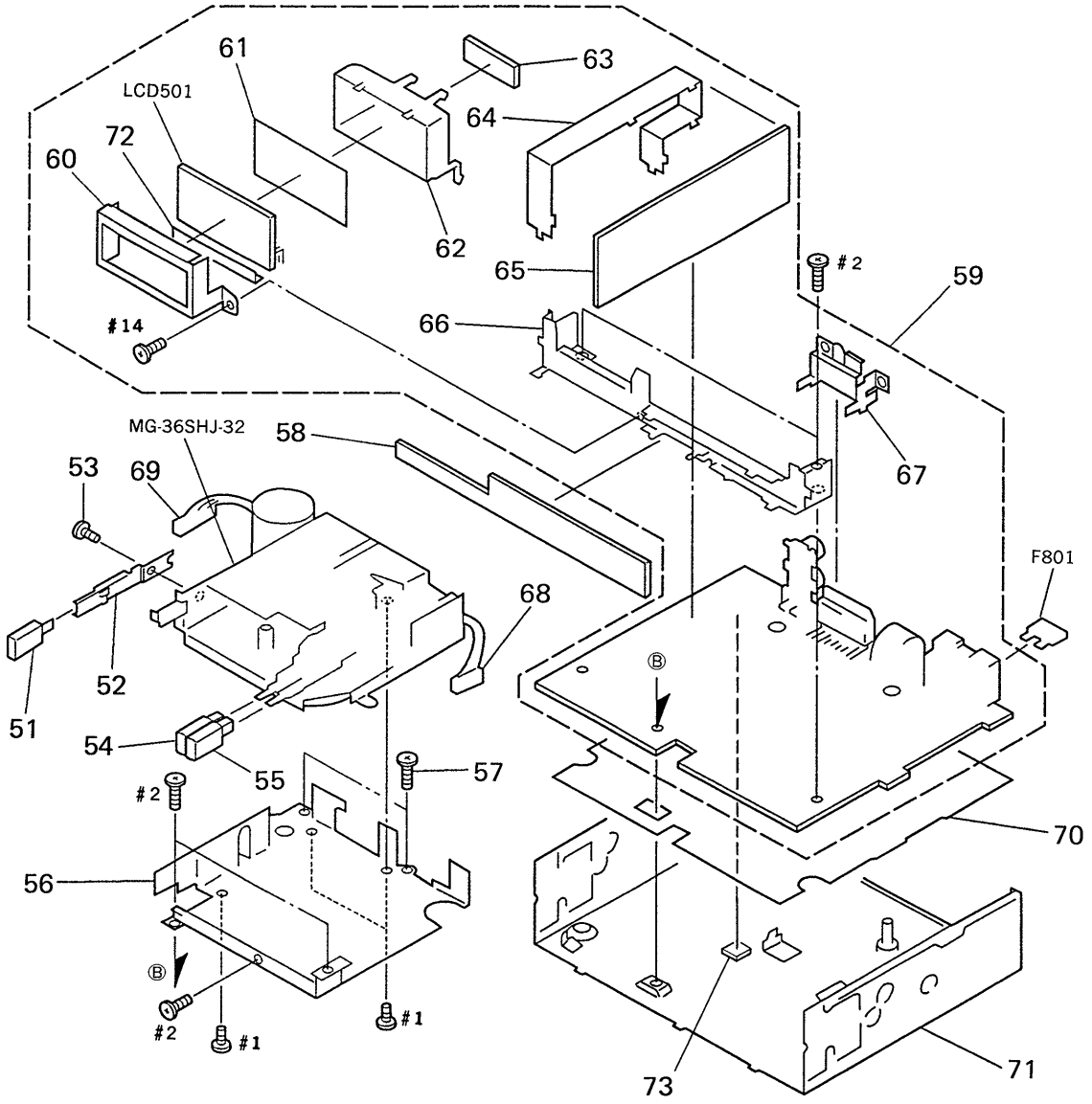
	TYPE A	TYPE B
LINE OUT Pin jack	×	○

6-1. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
* 1	3-935-559-01	COVER	
2	1-776-207-41	CORD (WITH CONNECTOR) (TYPE A)	
2	1-776-207-61	CORD (WITH CONNECTOR) (TYPE B)	
3	3-935-593-01	SPRING (C DOOR)	
4	3-935-577-31	PANEL, FRONT	
5	3-935-583-01	DOOR, CASSETTE	
6	3-935-587-01	BUTTON (1-6)	
7	3-935-588-01	BUTTON (S/MANU)	
8	3-935-591-01	PLATE (BUTTON), LIGHT GUIDE	
* 9	3-935-582-01	SINK, HEAT (TYPE A)	
* 9	3-935-582-11	SINK, HEAT (TYPE B)	
10	3-938-459-01	PLATE, GROUND	
* 11	3-938-991-01	SPACER (RF)	

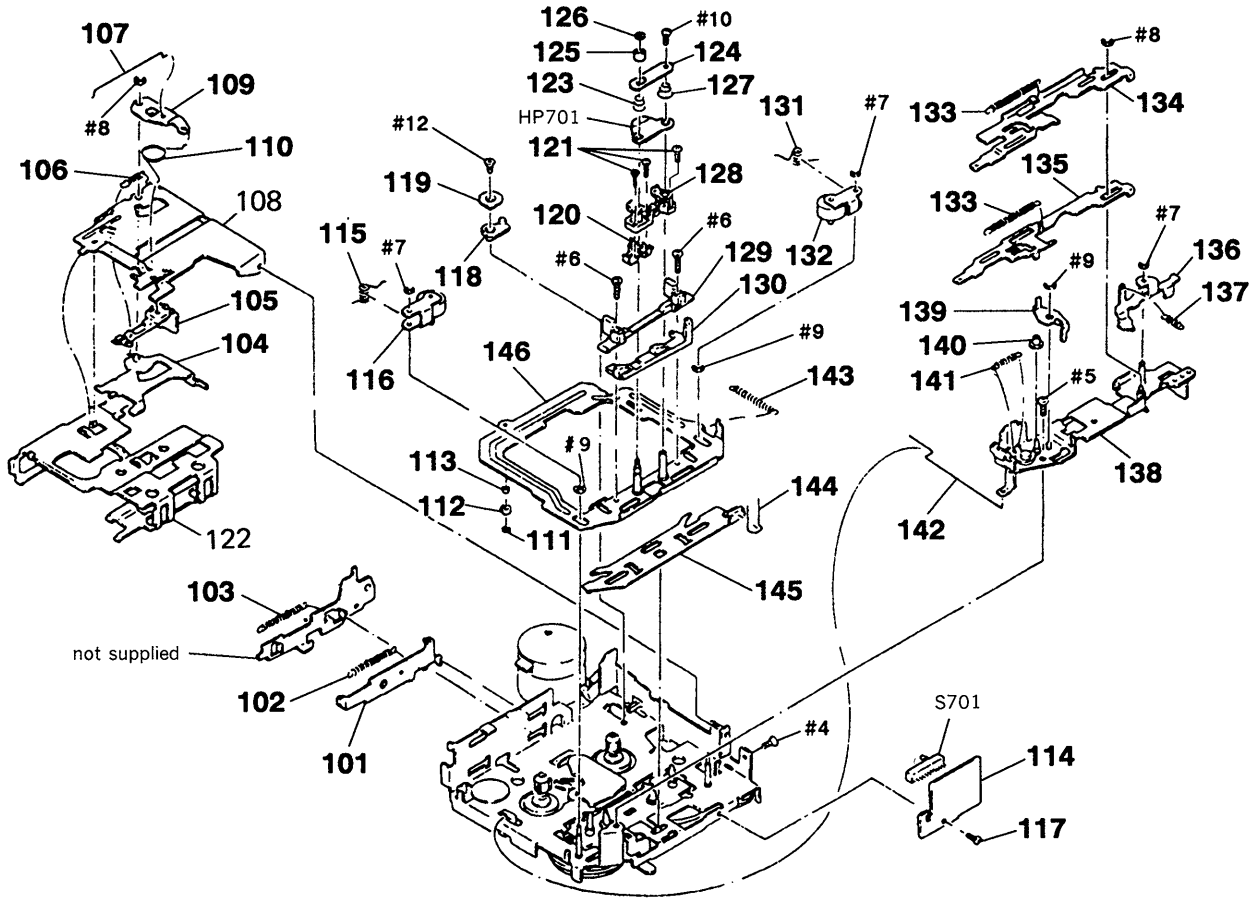
6-2. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
51	3-935-584-01	BUTTON (EJECT)	
* 52	3-935-569-01	LEVER (EJECT)	
53	3-372-033-11	SCREW (2.6X3), +P	
54	3-935-586-01	BUTTON (REW)	
55	3-935-585-01	BUTTON (FF)	
56	3-935-560-01	BRACKET (MD)	
57	3-919-171-01	SCREW (2.6X6) (C TIGHT)	
* 58	A-3309-294-A	SWITCH BOARD, COMPLETE	
* 59	A-3309-307-A	MAIN BOARD, COMPLETE (TYPE A)	
* 59	A-3309-586-A	MAIN BOARD, COMPLETE (TYPE B)	
* 60	3-935-574-01	PLATE (LCD), GROUND	
* 61	3-935-581-01	SHEET (REFLECTOR)	
* 62	3-935-580-01	HOLDER (LCD)	

Ref. No.	Part No.	Description	Remark
* 63	1-661-157-11	LAMP BOARD	
* 64	3-935-572-01	BRACKET (RF)	
* 65	1-661-158-11	TUNER BOARD	
* 66	3-935-557-01	CHASSIS (FRONT)	
* 67	3-935-558-01	BRACKET (IC)	
68	1-769-261-11	CORD (WITH CONNECTOR) 3P	
69	1-769-262-11	CORD (WITH CONNECTOR) 7P	
* 70	3-935-589-01	SHEET, INSULATOR	
* 71	X-3372-127-1	CHASSIS (MAIN) ASSY	
* 72	3-938-989-01	SHEET (LCD)	
* 73	3-938-990-01	SPACER (MAIN)	
F801	1-532-877-11	FUSE (BLADE TYPE). (AUTO FUSE) 10A	
LCD501	1-801-262-11	DISPLAY PANEL, LIQUID CRYSTAL	

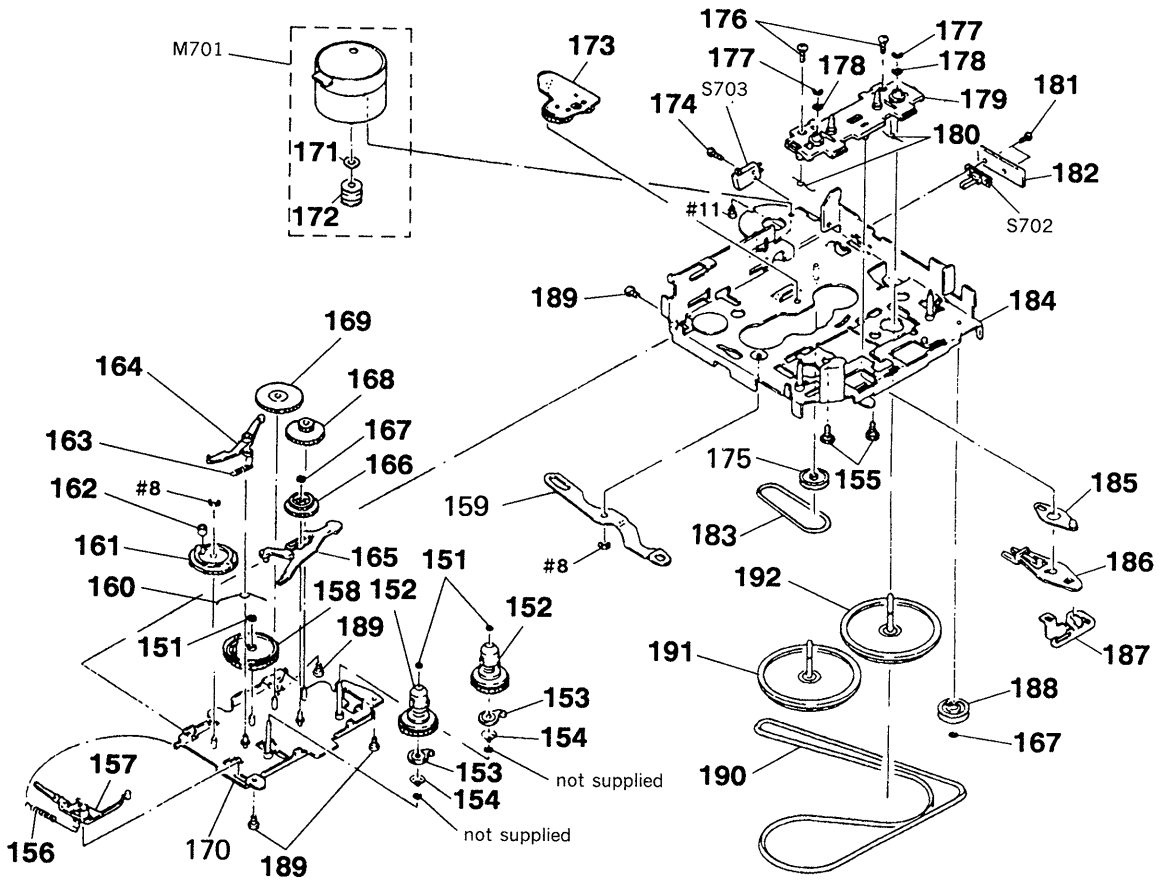
6-3. MECHANISM DECK SECTION 1 (MG-36SHJ-32)



Ref. No.	Part No.	Description	Remark
* 101	3-392-978-01	LEVER, EJECT	
102	3-392-950-01	SPRING	
103	3-392-951-01	SPRING	
* 104	3-392-921-01	LOCK ASSY, EJECT CAM	
105	3-392-972-01	HOOKER, TAPE	
106	3-392-953-01	SPRING	
107	3-392-969-01	LINK, RETURN	
108	3-375-383-01	HANGER (X), CASSETTE	
* 109	3-392-932-01	PLATE, CENTER	
110	3-392-961-01	SPRING (B)	
111	3-570-615-00	POLY-WASHER (DIA. 1.2)	
112	3-392-945-01	ROLLER (A), H.P	
113	3-392-942-01	ROLLER (B), H.P	
114	3-392-970-01	CHASSIS, SWITCH (DIRECTION SWITCH BOARD)	
115	3-392-958-01	SPRING (R)	
116	3-375-378-01	ARM (R) ASSY, PINCH	
* 117	4-908-792-11	SCREW (B2)	
118	3-372-244-01	ARM (N), MUTE	
* 119	3-397-427-01	COLLAR, MUTE ARM	
120	3-377-908-01	SHIM (X), ADJUSTOR	
121	3-375-379-01	SCREW, AZIMUTH	
122	3-375-384-01	HOLDER (X), CASSETTE	
123	3-392-956-01	SPRING (A)	
* 124	3-392-930-01	RETAINER, SPRING	

Ref. No.	Part No.	Description	Remark
125	3-392-943-01	ROLLER, FF	
126	3-676-387-00	POLY-SLIDER (DIA. 1.6)	
127	3-392-955-01	SPRING (A)	
* 128	3-379-142-01	ARM (B), ADJUSTOR	
129	3-392-984-02	GUIDE, TAPE	
130	3-377-909-02	LINK (X), ADJUSTOR	
131	3-392-957-01	SPRING (F)	
132	3-375-377-01	ARM (F) ASSY, PINCH	
133	3-392-948-01	SPRING	
* 134	3-392-980-01	LEVER, FF	
* 135	3-392-981-01	LEVER, REW	
* 136	3-392-935-01	ARM, LOCK	
137	3-392-917-01	SPRING	
* 138	3-372-242-01	BRACKET ASSY (D), LEVER	
* 139	3-392-933-01	LEVER (B), CHANGE	
140	3-392-994-01	ROLLER, PROGRAM	
141	3-392-954-01	SPRING	
142	3-372-243-01	LINK (B), SELECTOR	
143	3-392-952-01	SPRING	
144	3-392-962-01	SPRING	
* 145	3-392-919-01	ARM ASSY, F, R SELECTION	
* 146	3-392-975-05	PLATE ASSY (S), HEAD	
HP701	1-543-717-11	HEAD, MAGNETIC (PLAYBACK)	
S701	1-692-502-11	SWITCH, SLIDE (DIRECTION)	

6-4. MECHANISM DECK SECTION 2 (MG-36SHJ-32)



Ref. No.	Part No.	Description	Remark
151	3-676-387-00	POLY-SLIDER (DIA. 1.6)	
152	3-376-196-01	SPINDLE ASSY (S), REEL	
153	3-375-380-01	CAM ASSY, DETECTION	
154	3-370-619-01	SPRING, BACK TENSION	
155	3-392-918-01	SCREW, EJECT HOOK	
156	3-392-959-01	SPRING	
157	3-392-985-02	RATCHET	
158	3-392-990-01	GEAR, DETECTION	
* 159	3-392-979-01	LEVER, REVERSE	
160	3-392-960-01	SPRING	
161	3-392-987-01	GEAR, SELECTOR	
162	3-392-944-01	COLLAR (SELECTOR GEAR)	
163	3-375-131-01	SPRING, GEAR LOCK ARM	
164	3-392-989-02	ARM, GEAR LOCK	
165	3-392-986-01	ARM, SENSOR	
166	3-392-915-01	GEAR, IDLE	
167	3-570-615-00	POLY-WASHER (DIA. 1.2)	
168	3-392-936-01	GEAR (A)	
169	3-392-937-01	GEAR (B)	
* 170	3-392-976-01	BASE ASSY, REEL	
* 171	3-392-912-01	WASHER, MYLAR	
* 172	3-392-913-01	PULLEY, MOTOR	
173	3-392-916-01	ARM ASSY, TU GEAR	

Ref. No.	Part No.	Description	Remark
174	3-318-203-11	SCREW (B1.7X6), TAPPING	
175	3-392-938-01	GEAR, PULLY	
176	3-318-204-81	SCREW (M1.7X3), TAPPING	
177	3-590-768-00	RING (A), E	
178	3-701-437-11	POLY-SLIDER (A)	
* 179	3-375-381-01	BRACKET ASSY (X), CM	
180	3-392-963-01	SPRING (R)	
181	3-318-204-91	SCREW (M1.7X4), TAPPING	
182	3-375-376-01	MUTE (PWB)	
183	3-375-375-02	BELT (C), SUB	
* 184	3-392-974-01	CHASSIS ASSY, MAIN	
* 185	3-392-925-01	ARM (A) ASSY, F.R	
* 186	3-392-939-01	ARM, FF	
* 187	3-392-934-01	ARM (B), F.R	
188	3-392-941-01	PULLEY (A), IDLE	
* 189	4-908-792-11	SCREW (B2)	
190	3-392-967-01	BELT, MAIN	
191	3-392-995-02	FLYWHEEL ASSY (BR)	
192	3-392-926-02	FLYWHEEL ASSY (BF)	
M701	X-3365-046-1	MOTOR ASSY (REEL/CAPSTAN)	
S702	1-692-065-11	SWITCH, LEAF (MUTE)	
S703	1-554-790-21	SWITCH, POWER (TAPE DET)	

SECTION 7
ELECTRICAL PARTS LIST

LAMP **MAIN**

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u:μ, for example:
  uA..: μA.. uPA..: μPA..
  uPB..: μPB.. uPC..: μPC.. uPD..: μPD..
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When indicating parts by reference number, please include the board.

-

	TYPE A	TYPE B
LINE OUT Pin jack	×	○

Ref.No.	Part No.	Description			Remark
*	1-661-157-11	LAMP BOARD			
		**********			
		< PILOT LAMP >			
PL701	1-517-567-11	LAMP, PILOT			
PL702	1-517-567-11	LAMP, PILOT			
**********					
*	A-3309-307-A	MAIN BOARD, COMPLETE (TYPE A)			
*	A-3309-586-A	MAIN BOARD, COMPLETE (TYPE B)			
		**********			
*	3-935-557-01	CHASSIS (FRONT)			
*	3-935-558-01	BRACKET (IC)			
*	3-935-574-01	PLATE (LCD), GROUND			
*	3-935-580-01	HOLDER (LCD)			
*	3-935-581-01	SHEET (REFLECTOR)			
	7-621-773-86	SCREW +PTT 2.6X4			
		< JACK >			
ANT1	1-764-808-14	JACK (ANTENNA)			
		< CAPACITOR >			
C1	1-163-239-11	CERAMIC CHIP	33PF	5%	50V
C2	1-126-933-11	ELECT	100uF	20%	16V
C3	1-126-933-11	ELECT	100uF	20%	16V
C4	1-126-933-11	ELECT	100uF	20%	16V
C5	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C6	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C7	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C8	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C12	1-124-229-00	ELECT	33uF	20%	10V
C13	1-124-257-00	ELECT	2.2uF	20%	50V
C14	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C15	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C16	1-126-933-11	ELECT	100uF	20%	16V
C17	1-136-157-00	FILM	0.022uF	5%	50V
C18	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C19	1-216-295-00	CONDUCTOR, CHIP	(2012)		
C20	1-126-157-11	ELECT	10uF	20%	16V

Ref.No.	Part No.	Description			Remark
C21	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C22	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C23	1-163-181-00	CERAMIC CHIP	100PF	5%	50V
C24	1-163-181-00	CERAMIC CHIP	100PF	5%	50V
C25	1-163-181-00	CERAMIC CHIP	100PF	5%	50V
C26	1-163-181-00	CERAMIC CHIP	100PF	5%	50V
C27	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C101	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C102	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C103	1-124-229-00	ELECT	33uF	20%	10V
C104	1-126-157-11	ELECT	10uF	20%	16V
C105	1-126-288-11	ELECT	4.7uF	20%	16V
C106	1-126-157-11	ELECT	10uF	20%	16V
C107	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C108	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C109	1-126-157-11	ELECT	10uF	20%	16V
C110	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C111	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C112	1-126-157-11	ELECT	10uF	20%	16V
C113	1-126-301-11	ELECT	1uF	20%	50V
C114	1-126-301-11	ELECT	1uF	20%	50V
C115	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C116	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C201	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C202	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C203	1-124-229-00	ELECT	33uF	20%	10V
C204	1-126-157-11	ELECT	10uF	20%	16V
C205	1-126-288-11	ELECT	4.7uF	20%	16V
C206	1-126-157-11	ELECT	10uF	20%	16V
C207	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C208	1-164-157-11	CERAMIC CHIP	0.068uF	10%	25V
C209	1-126-157-11	ELECT	10uF	20%	16V
C210	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C211	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C212	1-126-157-11	ELECT	10uF	20%	16V
C213	1-126-301-11	ELECT	1uF	20%	50V
C214	1-126-301-11	ELECT	1uF	20%	50V
C215	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C216	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C301	1-124-589-11	ELECT	47uF	20%	16V

MAIN

Ref. No.	Part No.	Description			Remark
C304	1-126-157-11	ELECT	10uF	20%	16V
C305	1-126-157-11	ELECT	10uF	20%	16V
C306	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C307	1-126-157-11	ELECT	10uF	20%	16V
C308	1-124-234-00	ELECT	22uF	20%	16V
C309	1-126-157-11	ELECT	10uF	20%	16V
C310	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C312	1-126-288-11	ELECT	4.7uF	20%	16V
C313	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C314	1-124-234-00	ELECT	22uF	20%	16V
C315	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C316	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C317	1-126-162-11	ELECT	3.3uF	20%	50V
C401	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C402	1-124-589-11	ELECT	47uF	20%	16V
C403	1-124-589-11	ELECT	47uF	20%	16V
C404	1-126-936-11	ELECT	3300uF	20%	16V
C405	1-126-937-11	ELECT	4700uF	20%	16V
C406	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C407	1-126-288-11	ELECT	4.7uF	20%	16V
C408	1-126-923-11	ELECT	220uF	20%	10V
C409	1-126-157-11	ELECT	10uF	20%	16V
C410	1-136-165-00	FILM	0.1uF	5%	50V
C411	1-126-157-11	ELECT	10uF	20%	16V
C501	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C502	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C503	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C504	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C506	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C507	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C508	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C509	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C510	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C511	1-136-165-00	FILM	0.1uF	5%	50V
CX3	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
CX5	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
		< CONNECTOR >			
CN4	1-770-051-11	CONNECTOR 7P			
CN101	1-770-083-11	CONNECTOR 3P			
CNP401	1-774-701-11	PIN, CONNECTOR 16P			
		< DIODE >			
D1	8-719-421-09	DIODE	MA723		
D2	8-719-421-09	DIODE	MA723		
D7	8-719-991-33	DIODE	1SS133T-77		
D301	8-719-200-82	DIODE	11ES2		
D302	8-719-991-33	DIODE	1SS133T-77		

Ref. No.	Part No.	Description		Remark
D303	8-719-991-33	DIODE	1SS133T-77	
D401	8-719-921-74	DIODE	MTZN-10A	
D402	8-719-989-62	DIODE	RL254	
D403	8-719-991-33	DIODE	1SS133T-77	
D404	8-719-109-93	DIODE	RD6.2ESB2	
D405	8-719-991-33	DIODE	1SS133T-77	
D406	8-719-991-33	DIODE	1SS133T-77	
D407	8-719-991-33	DIODE	1SS133T-77	
D408	8-719-921-63	DIODE	MTZJ-7.5B	
D409	8-719-991-33	DIODE	1SS133T-77	
D410	8-719-110-03	DIODE	RD7.5ESB2	
D411	8-719-989-62	DIODE	RL254	
		< FUSE >		
F801	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A		
		< IC >		
IC2	8-759-100-96	IC	uPC4558G2	
IC102	8-759-368-11	IC	LC75372E	
IC103	8-759-100-96	IC	uPC4558G2	
IC104	8-759-369-42	IC	HA13153	
IC501	8-759-428-79	IC	uPD17017GF-B20-3B9	
		< JACK >		
JP1	1-774-698-12	JACK, PIN 2P (LINE OUT) (TYPE B)		
		< JUMPER RESISTOR >		
JR201	1-216-295-00	CONDUCTOR, CHIP	(2012)	
JR202	1-216-295-00	CONDUCTOR, CHIP	(2012)	
JR203	1-216-295-00	CONDUCTOR, CHIP	(2012)	
JR204	1-216-295-00	CONDUCTOR, CHIP	(2012)	
JR205	1-216-295-00	CONDUCTOR, CHIP	(2012)	
JR206	1-216-295-00	CONDUCTOR, CHIP	(2012)	
JR207	1-216-295-00	CONDUCTOR, CHIP	(2012)	
JR208	1-216-295-00	CONDUCTOR, CHIP	(2012)	
JR209	1-216-295-00	CONDUCTOR, CHIP	(2012)	
JR210	1-216-295-00	CONDUCTOR, CHIP	(2012)	
JR301	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR302	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR303	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR304	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR305	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR306	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR307	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR308	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR309	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR310	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR311	1-216-296-00	CONDUCTOR, CHIP	(3216)	

Ref. No.	Part No.	Description		Remark
JR312	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR313	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR314	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR315	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR316	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR317	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR318	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR319	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR320	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR321	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR322	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR323	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR324	1-216-296-00	CONDUCTOR, CHIP	(3216)	
JR998	1-216-295-00	CONDUCTOR, CHIP	(2012)	
		< COIL >		
L1	1-410-324-11	INDUCTOR	4.7uH	
L401	1-411-669-12	COIL, CHOKE		
		< LIQUID CRYSTAL DISPLAY >		
LCD501	1-801-262-11	DISPLAY PANEL, LIQUID CRYSTAL		
		< TRANSISTOR >		
Q1	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q2	8-729-120-28	TRANSISTOR	2SC1623-L5L6	
Q101	8-729-920-21	TRANSISTOR	DTC314TKH04	
Q102	8-729-920-21	TRANSISTOR	DTC314TKH04	
Q201	8-729-920-21	TRANSISTOR	DTC314TKH04	
Q202	8-729-920-21	TRANSISTOR	DTC314TKH04	
Q302	8-729-216-22	TRANSISTOR	2SA1162-G	
Q303	8-729-216-22	TRANSISTOR	2SA1162-G	
Q304	8-729-901-04	TRANSISTOR	DTA114EK	
Q401	8-729-205-95	TRANSISTOR	2SA1428-Y	
Q402	8-729-900-53	TRANSISTOR	DTC114EK	
Q403	8-729-205-95	TRANSISTOR	2SA1428-Y	
Q404	8-729-900-53	TRANSISTOR	DTC114EK	
Q405	8-729-205-95	TRANSISTOR	2SA1428-Y	
Q406	8-729-900-53	TRANSISTOR	DTC114EK	
Q407	1-807-307-31	TRANSISTOR	2SC3420-BL	
Q408	8-729-901-04	TRANSISTOR	DTA114EK	
Q409	8-729-900-53	TRANSISTOR	DTC114EK	
Q410	8-729-925-19	TRANSISTOR	2SD1225M-Q	
Q411	8-729-920-74	TRANSISTOR	2SC2412K-QR	
Q412	8-729-904-51	TRANSISTOR	DTB123EK	
Q413	8-729-904-51	TRANSISTOR	DTB123EK	
Q414	8-729-901-04	TRANSISTOR	DTA114EK	
Q415	8-729-920-74	TRANSISTOR	2SC2412K-QR	
Q417	8-729-901-04	TRANSISTOR	DTA114EK	
Q418	8-729-901-04	TRANSISTOR	DTA114EK	
Q419	8-729-205-95	TRANSISTOR	2SA1428-Y	
Q501	8-729-901-01	TRANSISTOR	DTC144EK	
Q503	8-729-901-01	TRANSISTOR	DTC144EK	
		< RESISTOR >		
R1	1-216-073-00	METAL CHIP	10K 5%	1/10W
R3	1-249-393-11	CARBON	10 5%	1/4W
R4	1-249-393-11	CARBON	10 5%	1/4W
R5	1-216-061-00	METAL CHIP	3.3K 5%	1/10W
R6	1-216-089-00	METAL GLAZE	47K 5%	1/10W
R7	1-216-049-11	METAL GLAZE	1K 5%	1/10W
R10	1-216-041-00	METAL CHIP	470 5%	1/10W
R14	1-216-073-00	METAL CHIP	10K 5%	1/10W
R20	1-216-049-11	METAL GLAZE	1K 5%	1/10W
R21	1-216-107-00	METAL CHIP	270K 5%	1/10W
R22	1-216-222-00	METAL GLAZE	10K 5%	1/8W
R23	1-216-073-00	METAL CHIP	10K 5%	1/10W
R24	1-216-075-00	METAL CHIP	12K 5%	1/10W
R25	1-216-053-00	METAL CHIP	1.5K 5%	1/10W
R101	1-216-089-00	METAL GLAZE	47K 5%	1/10W
R102	1-216-081-00	METAL CHIP	22K 5%	1/10W
R103	1-216-107-00	METAL CHIP	270K 5%	1/10W
R104	1-216-031-00	METAL CHIP	180 5%	1/10W
R105	1-216-077-00	METAL CHIP	15K 5%	1/10W
R106	1-216-689-11	METAL CHIP	39K 0.5%	1/10W
R107	1-216-073-00	METAL CHIP	10K 5%	1/10W
R108	1-216-077-00	METAL CHIP	15K 5%	1/10W
R109	1-216-073-00	METAL CHIP	10K 5%	1/10W
R110	1-216-073-00	METAL CHIP	10K 5%	1/10W
R111	1-216-057-00	METAL CHIP	2.2K 5%	1/10W
R112	1-216-057-00	METAL CHIP	2.2K 5%	1/10W
R113	1-216-073-00	METAL CHIP	10K 5%	1/10W
R114	1-216-073-00	METAL CHIP	10K 5%	1/10W
R115	1-216-081-00	METAL CHIP	22K 5%	1/10W
R116	1-216-081-00	METAL CHIP	22K 5%	1/10W
R201	1-216-089-00	METAL GLAZE	47K 5%	1/10W
R202	1-216-081-00	METAL CHIP	22K 5%	1/10W
R203	1-216-107-00	METAL CHIP	270K 5%	1/10W
R204	1-216-031-00	METAL CHIP	180 5%	1/10W
R205	1-216-077-00	METAL CHIP	15K 5%	1/10W
R206	1-216-689-11	METAL CHIP	39K 0.5%	1/10W
R207	1-216-073-00	METAL CHIP	10K 5%	1/10W
R208	1-216-077-00	METAL CHIP	15K 5%	1/10W
R209	1-216-073-00	METAL CHIP	10K 5%	1/10W
R210	1-216-073-00	METAL CHIP	10K 5%	1/10W
R211	1-216-057-00	METAL CHIP	2.2K 5%	1/10W
R212	1-216-057-00	METAL CHIP	2.2K 5%	1/10W
R213	1-216-073-00	METAL CHIP	10K 5%	1/10W

MAIN **SWITCH**

Ref. No.	Part No.	Description			Remark
R214	1-216-073-00	METAL CHIP	10K	5%	1/10W
R215	1-216-081-00	METAL CHIP	22K	5%	1/10W
R216	1-216-081-00	METAL CHIP	22K	5%	1/10W
R301	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R302	1-249-401-11	CARBON	47	5%	1/4W
R305	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R307	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R308	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R309	1-216-073-00	METAL CHIP	10K	5%	1/10W
R311	1-216-295-00	CONDUCTOR, CHIP		(2012)	
R312	1-259-880-11	CARBON	2.2M	5%	1/4W
R313	1-259-880-11	CARBON	2.2M	5%	1/4W
R314	1-259-880-11	CARBON	2.2M	5%	1/4W
R315	1-259-880-11	CARBON	2.2M	5%	1/4W
R316	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R317	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R401	1-216-081-00	METAL CHIP	22K	5%	1/10W
R402	1-249-417-11	CARBON	1K	5%	1/4W
R403	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R404	1-249-417-11	CARBON	1K	5%	1/4W
R405	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R406	1-249-417-11	CARBON	1K	5%	1/4W
R407	1-216-041-00	METAL CHIP	470	5%	1/10W
R408	1-249-401-11	CARBON	47	5%	1/4W
R409	1-216-073-00	METAL CHIP	10K	5%	1/10W
R410	1-216-025-00	METAL GLAZE	100	5%	1/10W
R411	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R412	1-216-081-00	METAL CHIP	22K	5%	1/10W
R413	1-216-113-00	METAL CHIP	470K	5%	1/10W
R414	1-215-861-00	METAL OXIDE	47	5%	1W F
R415	1-249-393-11	CARBON	10	5%	1/4W
R416	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R417	1-216-113-00	METAL CHIP	470K	5%	1/10W
R421	1-249-428-11	CARBON	8.2K	5%	1/4W
R422	1-216-081-00	METAL CHIP	22K	5%	1/10W
R423	1-216-073-00	METAL CHIP	10K	5%	1/10W
R424	1-216-073-00	METAL CHIP	10K	5%	1/10W
R425	1-216-210-00	METAL GLAZE	3.3K	5%	1/8W
R426	1-216-357-00	METAL OXIDE	4.7	5%	1W F
R427	1-216-357-00	METAL OXIDE	4.7	5%	1W F
R428	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R429	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R501	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R502	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R503	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R505	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R506	1-216-073-00	METAL CHIP	10K	5%	1/10W
R507	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R508	1-216-049-11	METAL GLAZE	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R509	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R510	1-216-238-00	METAL GLAZE	47K	5%	1/8W
R511	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R512	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R513	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R514	1-216-073-00	METAL CHIP	10K	5%	1/10W
R515	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R516	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R517	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R518	1-216-113-00	METAL CHIP	470K	5%	1/10W
R519	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R520	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R521	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R522	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R523	1-216-222-00	METAL GLAZE	10K	5%	1/8W
R524	1-216-073-00	METAL CHIP	10K	5%	1/10W
R525	1-216-073-00	METAL CHIP	10K	5%	1/10W
R526	1-216-073-00	METAL CHIP	10K	5%	1/10W
R528	1-216-073-00	METAL CHIP	10K	5%	1/10W
R532	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R535	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R537	1-216-049-11	METAL GLAZE	1K	5%	1/10W (TYPE A)
R539	1-216-081-00	METAL CHIP	22K	5%	1/10W
R540	1-216-101-00	METAL CHIP	150K	5%	1/10W
		< DISCHARGE GAP >			
SUP1	1-519-504-11	GAP, DISCHARGE			
		< SWITCH >			
SW501	1-571-478-11	SWITCH, SLIDE (FREQUENCY SELECT)			
		< TRIMMER >			
T1	1-141-346-11	CAP, VAR, TRIMMER 10PF			
		< VIBRATOR >			
X501	1-567-713-11	VIBRATOR, CRYSTAL (4.5MHz)			

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*	A-3309-294-A	SWITCH BOARD, COMPLETE
		**********
		< PILOT LAMP >
PL601	1-517-567-11	LAMP, PILOT
PL602	1-517-567-11	LAMP, PILOT
PL603	1-517-567-11	LAMP, PILOT

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R601	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R602	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R603	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R604	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R605	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R606	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R607	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R608	1-216-077-00	METAL CHIP	15K	5%	1/10W
R609	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R610	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R611	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R612	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R613	1-216-077-00	METAL CHIP	15K	5%	1/10W
R614	1-216-295-00	CONDUCTOR, CHIP		(2012)	
		< SWITCH >			
SW601	1-572-704-21	SWITCH, KEY BOARD (OFF)			
SW602	1-572-704-21	SWITCH, KEY BOARD (+)			
SW603	1-572-704-21	SWITCH, KEY BOARD (SEL)			
SW604	1-572-704-21	SWITCH, KEY BOARD (-)			
SW605	1-572-704-21	SWITCH, KEY BOARD (TUNER)			
SW606	1-572-704-21	SWITCH, KEY BOARD (LOUD/SENS)			
SW607	1-572-704-21	SWITCH, KEY BOARD (+ (SEEK/MANU))			
SW608	1-572-704-21	SWITCH, KEY BOARD (- (SEEK/MANU))			
SW609	1-572-704-21	SWITCH, KEY BOARD (2)			
SW610	1-572-704-21	SWITCH, KEY BOARD (1)			
SW611	1-572-704-21	SWITCH, KEY BOARD (A.MEM/M.SCAN)			
SW612	1-572-704-21	SWITCH, KEY BOARD (DSPL)			
SW613	1-572-704-21	SWITCH, KEY BOARD (6)			
SW614	1-572-704-21	SWITCH, KEY BOARD (5)			
SW615	1-572-704-21	SWITCH, KEY BOARD (4)			
SW616	1-572-704-21	SWITCH, KEY BOARD (3)			
**********					
*	1-661-158-11	TUNER BOARD			
		**********			
*	3-935-572-01	BRACKET (RF)			
		< CAPACITOR >			
C51	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C52	1-126-947-11	ELECT	47uF	20%	35V
C53	1-163-010-11	CERAMIC CHIP	0.0012uF	10%	50V
C54	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C55	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C56	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C57	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C58	1-163-231-11	CERAMIC CHIP	15PF	5%	50V

Ref. No.	Part No.	Description			Remark
C59	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C60	1-128-054-11	ELECT	22uF	20%	10V
C61	1-126-301-11	ELECT	1uF	20%	50V
C62	1-163-022-00	CERAMIC CHIP	0.012uF	10%	50V
C63	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C64	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C65	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C66	1-126-162-11	ELECT	3.3uF	20%	50V
C67	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C68	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C69	1-126-157-11	ELECT	10uF	20%	16V
C70	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C71	1-126-933-11	ELECT	100uF	20%	16V
C72	1-126-162-11	ELECT	3.3uF	20%	50V
C73	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C74	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C76	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C78	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C79	1-126-159-11	ELECT	0.47uF	20%	50V
C80	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C81	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C82	1-126-301-11	ELECT	1uF	20%	50V
C83	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C84	1-126-301-11	ELECT	1uF	20%	50V
C85	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C86	1-163-007-11	CERAMIC CHIP	680PF	10%	50V
C87	1-124-463-00	ELECT	0.1uF	20%	50V
C88	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C90	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C92	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C93	1-216-295-00	CONDUCTOR, CHIP		(2012)	
		< FILTER >			
CF51	1-567-309-11	FILTER, CERAMIC			
CF52	1-579-185-21	FILTER, CERAMIC			
		< CONNECTOR >			
CN51	1-778-187-11	PIN, CONNECTOR 8P			
CN52	1-778-188-11	PIN, CONNECTOR 16P			
		< TRIMMER >			
CT51	1-141-346-11	CAP, VAR, TRIMMER 10PF			
CT52	1-141-346-11	CAP, VAR, TRIMMER 10PF			
CT53	1-141-346-11	CAP, VAR, TRIMMER 10PF			
		< DIODE >			
D51	1-216-295-00	CONDUCTOR, CHIP		(2012)	
D52	8-719-049-16	DIODE 1SV234			

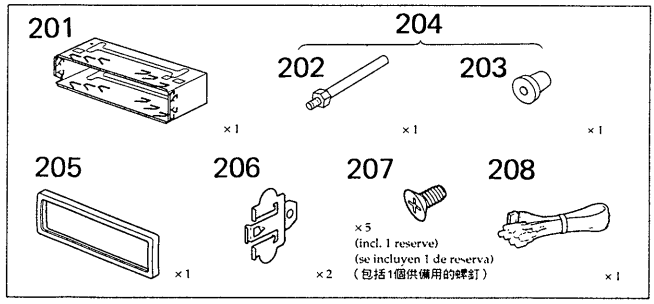
TUNER

Ref. No.	Part No.	Description				Remark
D53	8-719-053-81	DIODE	SVC354S			
D54	8-719-981-97	DIODE	MTZJ-3.0A			
D55	8-719-991-33	DIODE	1SS133T-77			
		< IC >				
IC51	8-759-265-93	IC	LA1875M-TE-L			
		< JUMPER RESISTOR >				
JR21	1-216-295-00	CONDUCTOR, CHIP			(2012)	
JR22	1-216-295-00	CONDUCTOR, CHIP			(2012)	
JR23	1-216-295-00	CONDUCTOR, CHIP			(2012)	
JR24	1-216-295-00	CONDUCTOR, CHIP			(2012)	
JR25	1-216-295-00	CONDUCTOR, CHIP			(2012)	
JR26	1-216-295-00	CONDUCTOR, CHIP			(2012)	
JR27	1-216-295-00	CONDUCTOR, CHIP			(2012)	
JR28	1-216-295-00	CONDUCTOR, CHIP			(2012)	
JR31	1-216-296-00	CONDUCTOR, CHIP			(3216)	
JR32	1-216-296-00	CONDUCTOR, CHIP			(3216)	
JR33	1-216-296-00	CONDUCTOR, CHIP			(3216)	
JR34	1-216-296-00	CONDUCTOR, CHIP			(3216)	
JR35	1-216-296-00	CONDUCTOR, CHIP			(3216)	
		< COIL >				
L51	1-410-973-11	INDUCTOR	22uH			
L52	1-410-973-11	INDUCTOR	22uH			
L54	1-411-852-11	COIL (MW OSC)				
L55	1-410-324-11	INDUCTOR	4.7uH			
		< TRANSISTOR >				
Q51	8-729-902-99	TRANSISTOR	DTC114TK			
Q52	8-729-931-02	TRANSISTOR	2SC2413KQ			
Q53	8-729-902-99	TRANSISTOR	DTC114TK			
Q54	8-729-012-35	TRANSISTOR	2SK711-BL			
Q55	8-729-931-02	TRANSISTOR	2SC2413KQ			
Q58	8-729-012-35	TRANSISTOR	2SK711-BL			
Q61	8-729-120-28	TRANSISTOR	2SC1623-L5L6			
Q62	8-729-900-53	TRANSISTOR	DTC114EK			
Q63	8-729-920-74	TRANSISTOR	2SC2412K-QR			
		< RESISTOR >				
R43	1-216-295-00	CONDUCTOR, CHIP			(2012)	
R51	1-216-049-11	METAL GLAZE	1K	5%	1/10W	
R52	1-216-033-00	METAL CHIP	220	5%	1/10W	
R53	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R54	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R55	1-216-039-00	METAL CHIP	390	5%	1/10W	
R56	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R57	1-216-041-00	METAL CHIP	470	5%	1/10W	
R58	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R59	1-216-039-00	METAL CHIP	390	5%	1/10W	
R60	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R63	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R64	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R65	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R66	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R67	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R68	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R69	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R71	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R72	1-216-039-00	METAL CHIP	390	5%	1/10W	
R73	1-216-069-00	METAL CHIP	6.8K	5%	1/10W	
R75	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R76	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R77	1-216-041-00	METAL CHIP	470	5%	1/10W	
R78	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R79	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R80	1-216-222-00	METAL GLAZE	10K	5%	1/8W	
R81	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R82	1-216-103-00	METAL CHIP	180K	5%	1/10W	
R86	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R89	1-216-053-00	METAL CHIP	1.5K	5%	1/10W	
		< VARIABLE RESISTOR >				
RV51	1-230-497-11	RES, ADJ, CARBON 22K				
RV52	1-230-495-11	RES, ADJ, CARBON 2.2K				
RV53	1-230-945-11	RES, ADJ, CARBON 470K				
		< COIL >				
T51	1-411-849-11	COIL (MW RF)				
T53	1-411-849-11	COIL (MW RF)				
T55	1-411-854-11	COIL (AM IFT)				
T56	1-411-847-11	COIL (FM DET)				
		< TUNER >				
TU51	1-465-919-11	TUNER UNIT				
		< VIBRATOR >				
X51	1-579-278-11	VIBRATOR, CERAMIC (456kHz)				

****

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
2	1-776-207-41	CORD (WITH CONNECTOR) (TYPE A)	
2	1-776-207-61	CORD (WITH CONNECTOR) (TYPE B)	
68	1-769-261-11	CORD (WITH CONNECTOR) 3P	
69	1-769-262-11	CORD (WITH CONNECTOR) 7P	
F801	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
HP701	1-543-717-11	HEAD, MAGNETIC (PLAYBACK)	
M701	X-3365-046-1	MOTOR ASSY (REEL/CAPSTAN)	
S701	1-692-502-11	SWITCH, SLIDE (DIRECTION)	
S702	1-692-065-11	SWITCH, LEAF (MUTE)	
S703	1-554-790-21	SWITCH, POWER (TAPE DET)	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
	3-856-691-21	MANUAL, INSTRUCTION (ENGLISH, SPANISH, CHINESE) (TYPE A)	
	3-856-691-41	MANUAL, INSTRUCTION (ENGLISH, SPANISH, CHINESE) (TYPE B)	
	3-856-692-21	MANUAL, INSTRUCTION, INSTALL (ENGLISH, SPANISH, CHINESE) (TYPE A)	
	3-856-692-41	MANUAL, INSTRUCTION, INSTALL (ENGLISH, SPANISH, CHINESE) (TYPE B)	
**********			
		**********	
		HARDWARE LIST	
		**********	
#1	7-621-775-10	SCREW +B 2.6X4	
#2	7-621-770-67	SCREW +PTT 2.6X6 (S)	
#3	7-621-770-XX	SCREW +PTT 2.6X8 (S)	
#4	7-621-555-10	SCREW +K 2X3	
#5	7-621-255-25	SCREW +PTT 2X4 (S)	
#6	7-627-553-88	SCREW, PRECISION +P 2X7	
#7	7-624-102-04	STOP RING 1.5, TYPE -E	
#8	7-624-104-04	STOP RING 2.0, TYPE -E	
#9	7-624-118-01	RING, RETAINING E-2.5	
#10	7-627-553-48	SCREW, PRECISION +P 2X4	
#11	7-621-255-15	SCREW +P 2X3	
#12	7-621-591-00	SCREW +K 2X4	
#13	7-621-773-87	SCREW +PTT 2.6X10 (S)	
#14	7-621-773-86	SCREW +B 2.6X4	
**********			

Ref. No.	Part No.	Description	Remark
		PARTS FOR INSTALLATION AND CONNECTIONS	
		**********	
201	X-3372-131-1	FRAME ASSY, FITTING	
202	3-386-828-01	SCREW, FITTING	
203	3-349-410-01	BUSHING	
204	X-3366-405-1	SCREW ASSY (EXP), FITTING	
205	3-935-579-01	COLLAR	
206	3-935-568-01	BRACKET (LOCK)	
207	X-3371-913-1	SCREW ASSY (J)	
208	1-776-207-41	CORD (WITH CONNECTOR) (TYPE A)	
208	1-776-207-61	CORD (WITH CONNECTOR) (TYPE B)	



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